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THE
PENNSYLVANIA MEDICAL JOURNAL

REPRESENTING

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

AT ITS ANNUAL SESSION HELD AT

PHILADELPHIA—OCTOBER, 1921

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BY

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PRESIDENT'S ADDRESS

FRANK G. HARTMAN, M.D.
LANCASTER.

Mr. President, Members of the Medical Society of the State of Pennsylvania, Ladies and Gentlemen:

One year ago when the House of Delegates saw fit to elect me to the highest office within the gift of this Society, I accepted the tender with a fear and trepidation born of my acknowledged inexperience, and the completion of the time when I am called to assume the duties of the presidency has in no way lessened my distrust of my ability to continue the high standard of activity established, maintained and executed by my predecessors in this station. Having in constant view all that has been accomplished in the past by this Society and its officers, I am all the more appreciative of the high honor you have conferred upon me and the County Society of which I am a member, and my earnest hope is that, in emulating those who have preceded me and with your help, I may emerge from my term of office with a showing of equal service to the profession of this State.

The problems confronting the medical profession to-day differ but little from those that have presented themselves since the practice of medicine was definitely established in this Commonwealth. Records of the organization of this Society show that at its first meeting on April 11, 1848, a resolution was offered having for its object an appeal to the Legislature for the passage of "a law to regulate and guard the practice of medicine in the State of Pennsylvania" as a protection "of the health and the lives of the citizens of this Commonwealth" against "disqualified persons who are permitted to impose themselves upon the public in undertaking what they do not understand, and pretending to what they do not possess, to the great injury of human health and danger to human life," and the profession has persistently stood for all that represented the greatest protection to mankind ever since. It has demonstrated its interest in the health of the public, not only by administering to the afflicted and in preventive medicine, but equally so in its effort to effect such legislation as would protect the community against those who, without the proper education and training, might attempt to practice the healing art.

This interest was never more apparent than during the last session of the Legislature of this State when the persistent activity on the part of your Committee on Health Legislation, with the support of those members of the Assembly, who were at the same time members of the profession, as well as that of a few other legislators who displayed an unusual interest in the conservation of the health of the citizenry of this Commonwealth and placed it above political prestige, prevented the passage of a measure, which had for its ultimate object a short cut to the practice of medicine with the elimination of many of the educational requirements now prescribed by the laws of the State. The work of your representatives must be all the more gratifying when we consider that this proposed act had for its support many influential persons active in legislative work.

A distinguished foreign statesman, discussing public ownership and operation as an economic folly, said in part:

> "Municipal, and especially state ownership can never have for its object simply economic advantage. People generally expect from government-run industries the latest improvements and the best commodities, little caring whether the concern is in a financial position to pay for them. Thus every public concern must, in order to content the people, tend toward the free distribution of its commodities."

This statement might be applied with equal force to the question of government controlled medicine as to the government ownership of industries and public utilities. It must be a source of satisfaction to this Society to know that the negative majority report, submitted by the commission appointed by the Governor to study the subject of Health Insurance, was in a large measure the result of the intelligent arguments presented by your representatives in voicing the sentiments of the profession. With the present industrial depression and labor unrest, we may expect sociological measures of this type to be given a respite, but at the same time our past experience must impress us with the necessity of being prepared to meet the question of commercialized medicine when it again appears, either in its old form or with new representations.

Out of the sensational procedure, near the close of the last session of State Legislature, came the law creating a Department of Welfare under the State government, which took over the powers and duties of the old State Board of Public Charities, the Lunacy Commission, the Prison Labor Board and other related activities. Not in many years has a law been enacted against such active opposition from so varied and widely separated sources, in and out of legislative circles. It was passed against all opposition as an administration measure, and time with method of application, will determine whether the Department is an advance in institutional administration or whether it is a subtle scheme for the formation of a far-reaching political organization. Of the many objections to the act this latter appeared to be most formidable and the one that threatened its rejection, but since its adoption we should accept it as constructive legislation and as a forward movement in the systematic administration of the State's charities. The complexion of the commission as recently appointed by the Governor should relieve all fears as to the method of application. Those of us who have appeared before the Commissioner in his former capacity as President of the Bureau of Medical Education and Licensure as applicants for licensure, or have had to confer with him in our hospital management, will be at once impressed with the sincerity of purpose that will of necessity permeate the activities of this new department. While we were compelled to disagree with him in many of his rulings in his former capacity, and while we still maintain that many of these were hardships and impracticable of application under local conditions and in many cases involved the imposition of a financial burden out of proportion to the appropriation received from the State, we at the same time must agree that these rulings had behind them the unselfish purpose of raising the standard of medical practice in Pennsylvania and the up-building of the hospital system of the State to the point of having it serve as a monument to this Commonwealth and as an object of pride to those associated with it.

New legislation is invariably viewed with suspicion and this new branch of the State government is no exception and the method of putting it into effect will be the determining factor in its reception by the profession of the State as well as by those associated with institutions receiving State aid who come under its rulings. I know of no better way of establishing opposition to this department than the arbitrary administration of its almost unlimited authority, especially so if its rulings should be precipitately or impulsively made; while on the other hand I can see a wonderful future for its activity if these rulings should be made after consultation and fair dealing with those who have for many years sacrificed their time in giving their best efforts to the State in the expenditure of money appropriated for the benefit of the afflicted coming under their care. The work of these many institutional boards dare not be minimized for in all cases they are controlled by men of affairs selected by reason of their capacity for administration, and the high standard attained by the institutions under their care is an evidence of the duties well performed. Antagonism can only result in conflict, while coöperation will react to the benefit of both administrators and those administered to. This Society should give its fullest measure of support to the Commission and its undertakings. By that means and that alone can the wisdom of the act be determined; and if then found unsound and irrational we should in a like manner exert every effort to have it stricken from the statute books of the State.

The activity in the care of tuberculars, which so characterized the work of the Department of Health of this State in the past, has placed Pennsylvania in the foreground in its interest in behalf of these unfortunates, and has given the present Commissioner an opportunity to so classify in camps the cases under his care as to further educate them in a manner to obtain the greatest amount of comfort in their affliction and the best results from their treatment. The authority conferred upon the counties of the State by the last Legislature to build hospitals for those afflicted with tuberculosis out of the county funds, either alone or in conjunction with neighboring counties, is an advance in tuberculosis work and should receive the support of the profession in effecting the purpose. The absolutely free distribution of diphtheric antitoxin without restriction of any kind, announced about one year ago, is another advance by the Department of Health which should limit the mortality of this much-dreaded disease to such an extent as to at once indicate the wisdom of the act and I trust statistics, when prepared, will so prove it.

Pennsylvania, in keeping with reports from other States, is suffering from a shortage of physicians. Hospitals have difficulty in securing their full complement of interns and communities are constantly making requests for physicians to locate in their neighborhood. The factors responsible for this shortage may be any or all of the following: While we have returned tc pre-war conditions, many physicians died in the service. Practically all of those who volunteered have been discharged, some returning to their former homes and others beginning practice in more congenial localities. Many who had been practicing in rural districts have moved to more densely populated sections and still others have entered industrial work or accepted attractive positions, with less labor and more regular hours, along professional lines. To these may be added as a reason the limitation of the number of students accepted by medical colleges and the report of fewer applications for admission to teaching institutions. Irrespective of the cause, an effort should be made to furnish competent medical service wherever it might be needed. In the portion of the State with which I am most familiar, community hospitals will not meet the requirements. These people are frugal, industrious and thrifty and demand professional service equal to that given to those living in the more densely populated portions and are willing to pay and pay well for it. If we can correct the condition by encouraging the young men who are just entering practice to locate in these sections, it is then our duty to exert our efforts in that direction or if it can be attributed to any cause under the control of this Society, it occurs to me that no greater service could be rendered the rural districts than to furnish them with adequate medical protection. If, on the other hand, any procedure on the part of the medical colleges is responsible for this shortage, effort should be made on their part to ameliorate the condition. The course of medical education is long and the cost a burden to a young man of limited means, especially so when the time involved and age attained, before he becomes self-supporting in his profession, enter into the consideration of the subject. Young men could be encouraged to enter the profession of medicine and money might be saved if pre-medical education could be made an elective course in the public school system. With the present effort of our Department of Public Instruction to effect a high standardization of the school system of the State, this might become an established fact, if properly presented to those in control. We cannot encourage or tolerate any effort to reduce the high standard of our teaching schools. The requirements of these institutions are fixed by legislative enactment and should be so regarded. Their standarization should in no way be controlled by any self-appointed or self-controlled board but should remain under the control of the creative body responsible for their existence. Self-appointed supervision, foreign to State control, will, in my opinion, never redound to the benefit of our educational institutions or to their matriculates. A competent well organized commission under State control having supervision of the entire educational system of the State including every educational feature, irrespective of its ultimate object, will, in due time, place this Commonwealth in the foreground educationally and will so fix the medical feature of its educational system as to place it firmly as a medical center and by systematic arrangement of its medical teachings give the intelligent young man of limited means an opportunity.

Another condition which must in time require the consideration of the profession is the present day education of the trained nurse. In the anxiety to educate the nurse properly, has not the practical side of nursing, that feature which has to do with the personal comfort of the patient and the relief of suffering, given way to too much theory? Recent discussion with a group of representative physicians indicates a marked impression of that kind. Where does the fault belong? Personally, I am inclined to place the responsibility with the profession, partly because of the responsibility we at times impose upon the nurse, partly because of our expectations from her and largely because we, in our busy lives, have in so many cases relinquished our teaching positions in the Training School to paid instructors, whose efforts are confined to teaching lines, and the time required for this purpose consumes so much of the day as to interfere with the pupil nurse receiving sufficient training in practical work, the work from which the patient and laity form their opinions of the nurse's capacity and the side of the work which adds materially to her helpfulness to the patient and usefulness to the physician.

From personal experience with legislative measures, in so far as they concern the medical profession, I would suggest that this Society select a member to represent it in any emergency that might arise. When one of our profession accepts a titular paid position in a department of the State he at once becomes an employee of the government and can obviously no longer be recognized as the representative of this Society unless specifically named as such. Legislators, however, according to the opinion sought, will conveniently recognize such employee as our fixed representative. Some definite action should be taken by which this confusion could be obviated so as to have a member of the profession available at all times to voice its sentiments, in and out of legislative season, with the several departments of the State having to do with health measures and health control.

For all time the medical profession has been held responsible for the health of our fellowmen and the present is no exception. How then can we best fulfill our mission and accomplish the greatest good for the welfare of the people of this great State? In one way only—by organization. Organization of the entire medical fraternity of the State, irrespective of the lines of distinction formed as a result of methods taught in the colleges attended, binding these together with one thought, that of the welfare of the afflicted, and then with a common purpose in life and practice, supporting the medical and charitable agencies throughout the State, we can make ourselves felt and recognized in our efforts to be constantly and unselfishly doing for others without the expectation of fee or reward.

ADDRESS

MENINGOCOCCUS INFECTION: A SUMMARY OF RECENT ADVANCES IN THE KNOWLEDGE OF ITS CLINICAL FEATURES*

W. W. HERRICK, M.D.
NEW YORK CITY

Following demobilization at the close of the Civil War, there was a widespread epidemic of meningococcic meningitis. Authorities predicted a similar outbreak with the dispersion of soldiers, and hence numerous carriers, at the close of the World War. Fortunately, this prediction has not been fulfilled. In fact, cerebrospinal fever has been somewhat less than commonly prevalent. Nevertheless, it is important to sum up the progress made in our knowledge of this disease during the numerous epidemics among the troops of the allied armies in order that we may be prepared to utilize such advances in future outbreaks of this peculiarly American disease.

The most important contributions of the English and French have been in the fields of epidemiology, bacteriology and serology. On the other hand, American observers have been chiefly interested in the clinical features and have added facts of value in bedside study and management. While touching upon the former, it is my purpose to deal chiefly with the latter—the advancement of the clinical side of our knowledge. It may be remarked that this advancement has, under ordinary peace-time conditions, been hampered by the term "meningitis," which has tended to limit the conception of the nature of the disease and has in turn prevented early diagnosis and the most effective plan of treatment. In this respect, meningitis has shared with many other diseases the consequences of too great a reliance upon a pathology which is concerned only or largely with changes in morphology which are late or terminal. From such a morphological viewpoint, one tends to regard disease as a fixed entity rather than a fluid process, having, like a stream, source, course and end. In meningitis, our clinical study has been too much concerned with the end and too little with the course.

The opportunities of medical military service have broadened our knowledge of meningococcic infection and have led to the practical adoption of the idea that this disease is not one of a single stage, but that three more or less well defined stages may with practical profit be regarded. These stages are:

1. Local or nasopharyngeal stage.
2. Stage of sepsis or of general blood stream infection.
3. Stage of metastasis.

The first stage is the carrier stage. As has long been known, from a fraction of 1% to 20% of a community may be carriers of the meningococcus, only a very small fraction developing the further stage of the infection. Thousands of carriers have been observed during the war, segregated or not segregated, sprayed with antiseptics and not sprayed, housed with noncarriers and isolated. To extract the kernel of worth from the mass of record concerning them is difficult and the state of our knowledge is not yet so fixed as to allow definite statements. In summary, it would seem, however, that the carrier is less of a menace than had been supposed; that the number of carriers is by no means the only factor determining the occurrence of epidemics, and that presumably susceptible contacts housed by accident or design in carrier camps rarely become infected. While we are not yet ready to ignore the carrier, the making of routine nasopharyngeal cultures from all the individuals in a community where the disease appears, and the isolation of all positive carriers, is probably not worth the effort required. A compromise in harmony with our lack of definite knowledge and with the practical possibilities of a situation is perhaps the taking of cultures from those immediately in contact with each case and the making or isolation of those found to harbor the organism.

The factor of individual susceptibility appears of great importance and it seems not unreasonable to infer that the majority of mankind is immune to the meningococcus, only the exceptional individual permitting more than an invasion of the upper air passages. A method by which the susceptibility of the patient may be measured is greatly to be desired. A step toward this end may be found in the work of Matsunami and Kolmer.[1]

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 7, 1920.

Does any measure clear meningococci from the nasopharynx of the carrier? With certain exceptions, those who have had large practical experience with field conditions are on the whole inclined to place little faith in antiseptics applied to the mucus membrane for this purpose. They are equally certain of the value of time, of fresh air, sunlight and other hygienic measures. Since the majority of carriers, treated or untreated, cease to show organisms on culture after two weeks, statements about the efficacy of any method designed to hasten elimination of meningococci are hazardous. The local application of antiserum has appeared to the writer sometimes effective. There is little question that the removal of diseased tonsils or adenoid tissue or the drainage of infected accessory nasal sinuses may serve to eradicate meningococci from some persistent foci.

The second stage of meningococcus infection is the stage of sepsis or of invasion of the general blood stream. Proof of this stage is seen, not alone in the clinical picture to be described, but in the positive blood culture which may be had in from 10% to 80%, depending largely upon the care with which the culture is made and the period of the disease during which the culture is made. Further proof is derived from the repeated isolation of meningococci from extrameningeal metastases in skin, peri- and endocardium, lung, eye and joints. Netter[2] states that the so-called septicemic form of the disease, although occasionally caused by the regular form of the meningococcus, is generally a feature of infections with the parameningococcus, which type produces a more serious form of the disease.

The writer's experience in the camps of the Southeastern Department has been at variance with this statement. During the earlier part of the epidemic at Camp Jackson, S. C., when these septic cases were the rule, the regular type of meningococcus was constantly present. Not for several weeks was a parameningococcus isolated from an active infection. It seems clear that data is insufficient upon which one can base definite statements of relation between the clinical features and the type of invading meningococcus.

Features of this stage of meningococcus sepsis are as follows: the temperature is rarely above 102°, more often 99° to 101°, and may be subnormal. It is often entirely out of proportion to the degree of the disturbance. The pulse is comparatively rapid and the blood pressure low. The patient is not exactly irritable, but is resistant, somewhat peevish, resents interference and uses the smallest amount of energy in responding to questions. His face is expressionless, his look vacant, his voice monotonous. In coma, the patient can almost always be roused and responds intelligently but immediately lapses into apparent unconsciousness. There is bitter complaint of a general aching or soreness so that the patient dreads disturbance. A polyarthritis may occur with onset. There is often a leaden or ashen mottling of the skin, or cyanosis of the face and ears, with dilatation of the veins of the forehead. An upper respiratory tract infection is almost universal, a coryza, pharyngitis or tonsilitis. Rarely bronchitis or pneumonia are seen. Conjunctivitis is occasionally seen at this stage. The oral secretions are scant and extremely thick and viscid, giving the mouth a dry, glazed or mucilaginous appearance. The tonsils and pharynx are swollen and red and the former may show small patches of thin, gray exudate.

The rashes are almost as characteristic of meningococcus infection as are those typifying the exanthemata. The usual rash is petechial in character, consisting of subcutaneous hemorrhages, varying in size from a pin point to areas one inch in diameter. These spots vary in shape, are of a purplish hue, do not disappear on pressure and come out with extraordinary rapidity in successive groups, lasting some forty-eight hours and, disappearing, leave a brownish stain which persists for two or three days. Cases may show but a few of these spots, others may be thickly sprinkled with them, so that the appearance of the patient is greatly transformed. These lesions are not inflammatory in character, but appear to be simply hemorrhages into the skin. Meningococci have been recovered from these petechiæ by cultural methods by Thomsen and Wulff[3] and others. These spots are also found on the serous surfaces and on the mucus membrane of the mouth and conjunctiva, but practically never in the retina. Their number and size vary directly with the severity of the infection. The milder types of the disease may show a maculo-papular rash not unlike that of typhoid fever. The individual spots are, however, somewhat larger and are only in exceptional cases very numerous. The fulminating cases not infrequently show purpura. This may be so extensive as to cover even one-third of the body surface. Rarely the purpuric areas may undergo necrosis. This may be preceded by bleb formation, leading to gangrene of the underlying tissues, which may be so extensive as to give rise to sloughing even of the deeper muscles. Gangrene of the extremities has occurred. This has been symmetrical in some cases.

Except in the very toxic cases, the reflexes are exaggerated. Some cases show also an inequality of the corresponding reflexes of both sides of the body. This inequality with exaggeration is often helpful in forming an opinion in the early stages of the infection. Meningeal signs and symptoms are usually absent at this stage. The cerebrospinal fluid is clear and may show no abnormal elements. Meningococci apparently first made their appearance as isolated individuals; later, globulin is increased, then the cells begin to appear in numbers, and within a few hours the purulent process is established.

It seems apparent from clinical and postmortem studies that the meningitis first occurs in the upper portion of the cerebrospinal spaces, especially the lateral ventricles and involves the spinal spaces at a somewhat later period. After a variable time of from a few hours, days or in extreme cases, weeks, meningeal involvement occurs. A few cases, about 5% in our experience, have not had meningitis at all, but have run their course as a widespread septicemia, with or without local manifestations in the eye, lungs, joints epididymes, pericardium or structures other than the meninges. In a certain number of cases, meningeal involvement may be practically concurrent with the symptoms of onset described. The average case, however, shows symptoms of a generalized infection for a period of about 48 hours before specific meningeal symptoms develop.

The meningeal phase of the disease requires no detailed description. Headache and frequent delirium, the relatively slow pulse with frequent sinus irregularities, the stiff neck, retracted head and positive Kernig's and Brudzinski's signs, the purulent cerebrospinal fluid with meningococci are familiar to every clinician. The conventional description of the disease deals with this phase to the frequent neglect of other features of the infection.

In addition to these usual and accepted meningeal features, other metastatic complications are noteworthy and constitute further argument that septicemia is an important factor in cerebrospinal fever.

Arthritis occurs in from 5% to 15% of all cases, the figures varying in different epidemics.[4] This is of two types. The first is an acute polyarthritis involving the wrists, elbows, shoulders, hips, knees and ankles in rapid succession or simultaneously, giving rise to marked local inflammatory symptoms with the exception of swelling. This kind of arthritis is transitory, is a feature of the stage of sepsis, has its probable pathologic basis in hemorrhages in or about the joints and usually lasts but 24 to 48 hours. It almost always marks cases with widespread hemorrhagic eruption and denotes a serious infection. Quite in contrast is the second variety of arthritis, the monoarticular type. This usually involves but one of the large joints, the knee in most cases. The swelling is great, the effusion generally thin, purulent and showing meningococci in about half the cases. There is a striking disproportion between the swelling and the other inflammatory signs—pain, tenderness and limitation of movement being but slight. There is no permanent disability although the arthritis may last for a number of days. Prognosis as to the recovery of the patient is good; as to the restoration of joint function, it is unconditionally good.

A third variety of arthritis, that resulting from serum treatment, may be seen the sixth to the tenth day after the beginning of serum treatment. Usually a number of joints are involved with swelling, redness, heat and tenderness and almost always with urticaria, edema and other evidences of serum disease.

Metastatic ophthalmia[5] occurs in about 5% of cases. This is an apparent infection of the eyeball through the blood stream and not by way of the optic nerve sheaths. Examples of it have occurred in cases of general meningococcus sepsis without meningitis and the bedside observation of the progress of this complication indicate primary infection by the blood stream and not an initial involvement of the nervous structures. It is astonishingly rapid in its development and vision may be lost within a few hours. Pain, congestion, increased tension and clouding of the transparent media may progress very rapidly and reach the end stage of bulbar hypotension and purulent infiltration of both anterior and posterior chambers within 48 hours. Rarely the process may be arrested before the final stage is reached, but vision is seldom retained. The treatment is mostly prophylactic and the sterilization of the blood stream by massive doses of antimeningococcus serum offers the greatest promise of success.

Netter has reported arrest of the process following injection of serum into the anterior chamber. This was tried in one of the writer's cases without influence on the progress of the lesion. Enucleation of the destroyed eye is desirable, but should be attempted only after a considerable time has been allowed to elapse in order that there may be walling off of the process. Infection of the blood stream has resulted from too early enucleation. When removed, these eyes usually show abundant meningococci in the purulent exudate within the globe. Sympathetic ophthalmia does not occur, but the process itself may destroy both eyes.

Pericarditis is a complication in about 3% of cases and marks those having serious infection.[6] The effusion is fibrinous or purulent, at times hemorrhagic. A massive "shaggy heart" may result. Aspration of this exudate with the injection of antimeningococcus serum into the sac has been a life-saving measure and should be done without hesitation in suitable cases. Endocarditis is rare. It is of the acute vegetative type and may affect either the right or the left side of the heart. Ulceration seems rare. These cases prove resistant to serum as a rule and the prognosis is always grave.

While it is doubtful if a specific meningococcus pneumonia occurs, there are some studies which at least raise this question. Holm and Davison[7] found a type of lung infection complicating influenza in which there was suppurative bronchiolitis or bronchopneumonia with the meningococcus the predominating organism in the sputum.

The frequency with which pneumonia complicates cerebrospinal fever is noteworthy. It may be coincident with onset when the lobar type is more often seen; or a late feature, in which event it is almost always of the lobular form. While meningococcus may be isolated from the sputum in some of these cases, pneumococci or other organisms common to the respiratory tract usually predominate. The post-mortem examination of these lungs reveals nothing peculiar.

Epididymitis[8] has been present in some epidemics in as great a proportion as 10% of cases. It occurs during the middle or latter part of the course, is characterized by moderate inflammatory symptoms, does not suppurate and apparently never results in testicular atrophy. Some of the more important advances in knowledge of meningococcus meningitis have been in the field of hydrocephalic or loculated meningitis; or better, subarachnoid block. In a certain number of cases sudden death occurs within two or three days of onset, preceded by a stormy course marked by clouded mentality, marked cyanosis of the face, distention of the veins of the forehead and marked meningeal or cerebral irritation. In such the necropsy may reveal a wedging of the brain stem into the foremen magnum, a compressed ring of bulb and cerebellum giving evidence of the high degree of pressure within the cranium. In the opinion of Fairley & Stewart[9] this condition results from an inflammatory swelling of the encephalon and consequent increase in bulk of the cranial contents. There is much to support this view. Careful microscopic study of the brain gives ample evidence that it is not alone the brain envelope that is involved. It is indeed possible that the process is primary in the vascular apparatus of the encephalon as a whole and that the meninges are involved from within. The suggestion is made by Fairley and Stewart that venesection might reduce the swelling of the brain, while Haden[10] advises trial of hypertonic solutions of glucose intravenously to the same end. Both may be recommended in the event of suspicion of this grave complication.

The less acute types of hydrocephalic meningitis are more commonly recognized or recognizable. The meningococcus may cause either the obstructive of communicating type of hydrocephalus. The latter, however, is more common and affects the layer of piarachnoid roofing over the fourth ventricle blocking the foramina of Luschka and Majendie. In the obstructive type the writer has seen organized adhesions blocking the aqueduct of Sylvius with resulting dilatation of the ventricular system above the point of obstruction. This complication demands action or death is certain. Of greatest importance is diagnosis before serious changes have taken place in the brain as a result of its compression from the accumulated cerebrospinal fluid. Subarachnoid block is to be suspected when there is failure to obtain more than a few drops or a few cubic centimetres of cerebrospinal fluid by lumbar puncture. In addition, there is the lack of response to treatment by appropriate serum, the evidence of excessive meningeal irritation, rapid emaciation, prolonged course, distention of the veins of the head, bulging fontanel (?) and clouded consciousness. In suspected hydrocephelic meningitis, the first measure which may be tried is Cobb's Method.[11] This consists in performing lumbar puncture, leaving the needle in place, then, under chloroform anesthesia, manipulating the head upon the neck with vigor. As Wall[12] has shown, this measure folds and unfolds the layer of piarachnoid which lies between the brain stem and cerebellum, and which contains the foramina of Luschka and Majendie.

A very considerable mobilization of the brain stem results from this manipulation and when there is a pressure differential on either side of tenuous adhesions, a break through may result. In the writer's experience, this measure has twice saved life. Dr. R. G. Torrey, of Philadelphia, has personally communicated a similar instance. If this measure fails, a ventricular puncture must be done without delay. This is not a grave procedure and may be performed without hesitation. As much fluid as will readily come is withdrawn and a somewhat less amount of serum is allowed to flow into the ventricle. This may be repeated daily as long as symptoms persist.

In cases of the communicating type of hydrocephalic meningitis puncture of the cisterna magna, according to the method of Wegeforth, Ayer and Essick,[13] is permissible as a last resort, although there is serious danger of hemorrhage from injury to the regional veins.

The most important point in the management of the disease as a whole is early diagnosis and hence early treatment. To the list of statistics published by others and corroborative of this the following may be added: In a series of 330 cases observed by the writer, the mortality in 125, in which diagnosis was made in the stage of clear cerebrospinal fluid, was 15.2%. In 205 cases, in which the diagnosis was made after the cerebrospinal fluid had become cloudy, the mortality was 34.6%.

The primary therapeutic aim in the early phases of the infection is the sterilization of the blood stream by massive doses of antimeningococcic serum. As in the specific treatment of tetanus, diphtheria or pneumonia from infection with Pneumococcus, Type 1, the maximum amount of antibody consistent with safety and in consideration of the severity of the symptoms should be given. It is possible to administer but a limited amount of serum by the subarachnoid route. Further, it is probably unwise to administer serum thus previous to the development of meningitis. However, it is appreciated that this is a debatable point, and Amos and Eberson[14] have expressed a dissentient view.

In the stage of sepsis, the chief reliance is intravenous serum therapy. All the precautions which attend intravenous injections of foreign serum must be used. Sensitiveness to horse serum must be determined by the intracutaneous test, and a preliminary subcutaneous injection of ½ to 1 c.cm. of serum given. An average dose of morphine and atropine should be given hypodermically one-half hour before the intravenous injection. To the average adult, 100 c.cm. may be given by vein, the first 15 c.cm. at the rate of 1 c.cm. per minute, stopping if dyspnea, palpitation, precordial oppression, vomiting or other immediate serum effects occur. The intravenous injection should be repeated every 8 or 12 hours in serious cases; every 24 hours in the average case, until 3 or 4 injections are given. If the cerebrospinal fluid is cloudy, lumbar puncture should be performed about 1 hour after the intravenous injection, and as much cerebrospinal fluid withdrawn as is necessary to bring the pressure to an approximate normal. Then an amount of serum about 10 c.cm. less should be allowed to flow in by gravity. This intraspinal treatment is to be repeated each 24 hours, as long as acute symptoms last, and may be made less frequent when the patient appears free from symptoms of active infection, when organisms disappear from the cerebrospinal fluid and mononuclear cells reappear in numbers. It is important that lumbar puncture be performed on an average of every 48 hours during early convalescence. By this measure, the condition of the cerebrospinal fluid may be carefully observed, keeping in view the tendency to relapse. With return of organisms or increased clouding of the fluid, daily intraspinal treatments must be renewed. In some cases, after prolonged treatment, the meninges become intolerant of serum. This is shown by headache, restlessness, increased retraction of the head and other evidence of heightened irritability of the meninges following the treatment. In this situation, it is usually best to omit all intraspinal serum administration even if organisms persist. If there is an excessive secretion of cerebrospinal fluid, this may be drained by lumbar puncture each day or on alternate days. Often even this measure is best omitted and convalescence is hastened by letting the patient alone. In the acute stages, morphia and chloral are effective adjuvants of specific treatment and may be used freely. In the prolonged cases, nutrition suffers and should be maintained by an ample diet. The intravenous injection of glucose solution as advised by Litchfield[15] is sometimes useful when cachexia exists.

Of fundamental importance is the choice of a serum. The serum should contain antibodies specific for the type of meningococcus which the patient harbors. Recent work has shown that the four chief types of meningococci differ somewhat sharply in their immuniological properties and that any serum which will combat one type may be of little avail against another. The use of monotypical serum has been recommended by Netter in France, and by Gordon and his associates in England. Both in theory and in practice, this is desirable. The practical difficulties, however, are obvious. In a community well equipped with laboratory facilities, rapid determination of the type of the invading organism and the selection of a corresponding type of serum is possible; but in the absence of these resources, it is better to depend upon a polyvalent serum. It is always better to give a polyvalent serum at the earliest possible moment and then, as soon as the determination of the type of meningococcus is made, the monovalent typical serum may be used. In every day clinical work, this is not at present possible in the United States. Since monovalent serums are not available outside of research institutions, dependence must be placed upon polyvalent serum. Serums vary greatly in their effectiveness. Much of the disappointment of the serum treatment of this disease, such as was experienced in England in the first year of the war, is due to lack of specific antibody content. Certain commercial serums are particularly lacking in this regard. Besides the therapeutic effect, the agglutinin content is a practicable measure of the value of a serum. Serums should agglutinate representative types of meningococci in dilutions of at least 1 : 200 to be effective. Some of the more carefully prepared serums will agglutinate in dilutions of 1 : 800, or even 1 : 1200. The writer has found the serums prepared by the New York City or the New York State Boards of Health or the Rockefeller Institute much richer in agglutinins and much more effective therapeutically than any of the commercial serums used.

A form of profiteering which might well be criticized is practiced by certain manufacturers of commercial serums who charge the exorbitant price of six dollars for 30 c.cm. of antimeningococcus serum—a sum which puts intensive serum therapy beyond the reach of those of limited means in communities not protected by a well organized health department. There is crying need of effective governmental regulation of the quality, distribution and price of antiserums.

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DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh): I had the pleasure of visiting Dr. Herrick at Camp Jackson while he was carrying on the investigation which he has just reported. Dr. Herrick was very fortunate in the assistants that he had at the base hospital. This base hospital also had an unusually efficient laboratory force, and an unusually competent and broad-minded commanding officer. Consequently the work which Dr. Herrick directed for the study of meningitis during the epidemic there, is most valuable.

I feel that the importance of giving the antimeningococcic serum intravenously, as well as intraspinally, in every case of meningococcic meningitis, is not sufficiently appreciated. It should become the routine practice throughout the country. This cannot be too strongly impressed upon the medical profession. Anyone who has followed cases of meningococcic meningitis, with and without intravenous use of the serum, and compared the two methods, is always strongly impressed by the advantage of introducing the serum by the two direct routes. I was lead to adopt this method in my service at Camp Lee, by the occurrence of a case of meningococcic pneumonia in my wards. After seeing the striking effect of the serum given intravenously in this case, I ordered this used as a routine practice in all meningitis cases, and when I visited Dr. Herrick I was greatly pleased to find that he was following the same plan with even larger doses, which I promptly adopted.

Dr. Myer Solis-Cohen (Philadelphia): Considerable light on meningococcic virulence and on the varying susceptibility of human beings to meningococcic infection has been thrown by an investigation conducted by the late Dr. Geo. D. Heist, at Camp Zachary Taylor.

Working at the Mastbaum Research Laboratory of the Jewish Hospital, with Solomon Solis-Cohen and me, he had already shown in the case of the pneumococcus and the globoid bodies, that animal susceptibility and bacterial virulence may be clearly demonstrated *in vitro* if the bacteria are cultivated in whole, uncoagulated blood, which observations had been confirmed for the pneumococcus by Bull and Bartual and had been shown by Matsunami and Kolmer to be likewise true for the meningococcus.

Meningococci from the spinal fluid of two cases of meningitis and from the throats of carriers were grown by Dr. Heist in the whole uncoagulated blood of different groups of men. Those freshly isolated from the spinal fluid of a case of cerebrospinal meningitis grew rapidly in the whole blood of normal men, while the majority of the strains freshly isolated from the throats of carriers grew scarcely at all, although a few grew to some extent. From this he concluded that the spinal fluid strains of meningococci are more virulent than the carrier strains; that some carrier strains are more virulent for man than others; and that most men are susceptible to the attacks of meningococci that has passed through the human nervous system. The experiments also showed that the blood of some men permits the growth of the same strain much more readily than does the blood of other men, which indicates that men vary greatly as to their susceptibility to meningococci infection, some men appearing to be quite resistant, others less so. Early in the study Dr. Heist observed that his own blood had very little resistance to meningococci, it being the only one among the large numbers tested that permitted the rapid growth of carrier strains. He concluded therefore that this minority of men is more likely to develop meningitis after exposure to a carrier; and that it is probably among this group that most of the cases of meningitis occur.

In the early part of last August Dr. Heist developed meningococci meningitis. I made the diagnosis on the clinical symptom of severe headache and the examination of the spinal fluid, before the onset of other meningitic symptoms and in the absence of the general symptoms described by Dr. Herrick. These symptoms were later examined for without success by Dr. Arthur Dannenbaum, who was one of Dr. Herrick's assistants at Camp Jackson, just before the first dose of serum was given; although some meningitic symptoms developed next day.

Antimeningococcic serum was administered intravenously, intrathecally and subcutaneously—in all 425 c.c., of which 365 c.c. came from the Rockefeller Institute. After the second injection no meningococci were found by Drs. John A. Kolmer, Herbert Fox, or Edward Steinfield, who examined different specimens in their respective laboratories. Three more injections of the serum were given. The first mental disturbance occurred about twenty-four hours after the fifth injection. The next day the spinal fluid was clear but was found to be loaded with meningococci. A few hours later Dr. Heist died. At no time was his leucocytic count over 9,300.

ORIGINAL ARTICLES

CARCINOMA OF THE RECTUM*

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In the consideration of rectal carcinoma there are certain outstanding facts.

(1) Carcinoma of the rectum is a common disease ranging next in frequency to carcinoma of the stomach.

(2) The mortality of cancer of the rectum unoperated is the same as that of cancer of the stomach, namely, 100%.

(3) Yet strenuous efforts are made to diagnosticate and operate early upon cancer of the stomach, while general apathy exists concerning the recognition and early operation upon cancer of the rectum, and in some quarters skepticism and even opposition to the radical operation still obtain.

(4) This is the more remarkable because the possibilities of cure of cancer of the stomach by operation are much inferior to the chances of permanent cure in cancer of the rectum when operated upon in the same stage.

(5) This is due to the known fact that as a class, cancer of the rectum grows more slowly, metastasizes less rapidly and is susceptible to wider excision than gastric cancer.

(6) The apparent paradox is explainable chiefly by three conditions:

(a) At the present time, on the average more than a year has elapsed between the onset of symptoms and recourse to surgical relief.

(b) The dread of an artificial anus, which is at times the price the patient must pay for the chance of surgical cure, deters both physician and patient from seeking operation until driven by the extremity of suffering or fear of impending death.

(c) The further fact which we as surgeons must acknowledge that there is as yet no general agreement as to the operative method or methods which are at once least dangerous primarily and most promising of ultimate cure.

Attacking the propositions seriatim, the first is simply that of diagnosis. The first step in any diagnosis is a knowledge of the probability and incidence of the conditions underlying symptomatology. We have already referred to the frequency of rectal carcinoma. It remains to hammer it into the consciousness and subconsciousness of the profession. In 32 cases which I have recently collected from the records of the Hospital of the University of Pennsylvania the duration of symptoms before definite diagnosis varied from a month to two and a half years with an average of over twelve months. But few of these cases had had a rectal examination until shortly before they entered the hospital. They had been treated as a rule by members of the regular profession for hemorrhoids, for colitis, for intestinal indigestion, for constipation or diarrhea and for chronic obstruction of undetermined cause. It is time that rectal carcinoma be placed firmly on the list of conditions demanding early diagnosis and radical treatment along with abdominal emergencies and malignant disease elsewhere in the body. It is important that the practitioner should divest himself of the idea that rectal cancer gives rise to distinctive symptoms during the early and curable stage. The history is simply that of bowel irregularities, either constipation or diarrhea, or alternating periods of costiveness and loose bowels. As a rule there is some loss of blood early in the disease. This may be a profuse hemorrhage or more often small amounts of blood, and may come with the stool or independently of it. Pain, tenderness and a feeling of inability to empty the rectum completely are most often later developments and at this period the so-called spurious diarrhea is common, characterized by the frequent passage of small amounts of blood and mucus. Troublesome distention, with abdominal cramps and the passage of stools of small calibre occur still later in the disease and are usually associated with annular growths which have developed sufficiently to cause stenosis. Many cancers of the rectum, especially those of the ampulla, never cause mechanical obstruction, while those of the rectosigmoid junction and the anal canal are commonly obstructive in character. General symptoms are, as a rule, late in development. In the series referred to, after the cancer had existed on an average of more than a year, the average blood count showed: hemoglobin 71%, erythrocytes 4,441,000, and leucocytes 9,750. The moderate loss of hemoglobin and red cells could easily be attributed to the loss of blood rather than to the cachexia of malignant disease which in this variety of cancer is conspicuous by its absence until the later stages. Loss of weight, loss of strength and appetite behave in similar fashion.

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The fact is that the diagnosis is *only* to be made, but usually easily to be made by examination. The finger is the best instrument and a rubber glove or finger cot the only armamentarium. Fully 90% of rectal cancers are readily palpable with the finger while those of the rectosigmoid which are not palpable give early signs of obstruction. Two-thirds of the cases occur within the two decades from forty to sixty years of age, but the extremes of life are not immune. The oldest case in this series was 76 and the youngest 16. The latter gave a history of removal of some kind of a rectal growth at the age of 2 years, and the condition when seen at the age of 16 was apparently a recurrence, having given symptoms for two years and was extensive and inoperable. Diagnostic pitfalls are the liability to consider the bowel irregularities of the early stages as functional disturbances and te bleeding as due to hemorrhoids. The sole hope and starting point of effective measures against this condition is examination.

As to the dread of an artificial anus for fecal discharge we all recognize the difficulty of stemming the prejudice which exists against the operation and the disinclination of the patient to submit to it. At the outset it must be placed squarely up to the practitioner that the earlier the diagnosis the fewer will be the unavoidable permanent colostomies. As to its necessity in certain cases, none has stated it more clearly than W. J. Mayo when he said recently that "it is a fact that the price the patient must probably pay for the opportunity to recover from the operation and remain well is a permanent colostomy." It is a grave responsibility for the physician and one entirely repugnant to our principles to assume that death is preferable to life with an artificial anus. Moreover it is not true. The impression has gained currency largely because of faulty colostomies and the use of the operation in otherwise inoperable cases, which only too often is but the means of prolonging a hopeless and wretched existence. Instances can be multiplied of comfortable, useful and satisfied life after permanent colostomy. Lynch mentions the case of a man who was in bankruptcy largely as a result of the physical disabilities due to a rectal growth, but after excision with permanent colostomy he regained his health and vigor to such a degree that he resumed his business and in a short time amassed a fortune of a million dollars. I know personally a young man with a permanent colostomy who has risen high in our profession and gives promise of a long life of extraordinary usefulness. Unquestionably an artificial anus is undesirable and is to be avoided whenever safely possible, but it is not to be thought a less desirable thing than death from malignant disease.

In considering the operative treatment of cancer of the rectum we find the most extraordniary number of varied methods and procedures. The situation reminds one of the wealth of advice to be had on the treatment of a medical condition for which there *is* no satisfactory treatment. It is axiomatic in surgery that low mortality and satisfactory results are to be achieved only by standardization of methods along rational lines. Accordingly we are not surprised that the mortality of surgeons operating casually upon such cases as they may chance to encounter is appalling, certainly more than 25% and often much higher. On the other hand clinics and individuals that have cultivated this field and achieved considerable standardization and experience can show very low mortalities as, for example, Crile, who reports no fatalities in his last 20 excisions of the rectum, and Lockhart-Mummery, who has an equally good record in his last 24 cases.

We believe that one principle can now be enunciated as a prerequisite to low mortality, namely: the preliminary colostomy, which entails a two- and possibly three-stage operation. This rule may not be violated on caprice but only on rare and unusual grounds. In palliative operations and in limited local excisions if thought advisable the preliminary colostomy may be omitted without marked effect upon primary mortality, but when the complete operation is made with its enormous denudations and opportunity for infection it is only by the preliminary colostomy that the requisite strict asepsis can be consistently maintained. Abdominal exploration should be made at this stage and the colostomy made of a temporary or permanent type in accordance with the decision then reached as to the next stage. In any event a spur must be formed that will divert the entire fecal stream. Our preference is for a lumbar or a high and lateral inguinal colostomy as being less in the way of a second laparotomy and less objectionable to the patient than an opening more centrally situated.

It would seem to be an improvement to suture the two limbs of bowel together if the colostomy is to be only temporary, as by this means the spur can be cut away in the manner of the third stage of Mikulicz which permits either spontaneous closure or an easier and safer plastic.

The sacral anus is to be condemned as more filthy and difficult of control. The abdominal anus is also to be preferred if there is great probability that a functionating anus in the normal position cannot be maintained. Agreement is quite general among surgeons that an abdominal colostomy is preferable to an incontinent anus in the normal position and while the lure of operation to the patient is much stronger if he is told that his bowels will move in the normal position, whenever there is grave doubt of our ability to perform sufficiently wide excision and still preserve the spincter apparatus, it is our duty to urge strongly the choice of an abdominal anus.

The second stage of the operation, involving actual removal of the growth, must be planned in accordance with the general principles underlying the surgery of carcinoma. Not only the tumor should be removed but all the adjacent tissues and the area of lymphatic drainage. Here arises the question of operability. Metastasis at a distance or in the liver is a contraindication to radical removal. If the growth has penetrated the prostate, urethra, the internal organs of generation in the female or the posterior parietes, it is our belief that it is in the best interests of surgery and of the individual to withhold the radical operation. If, however, the case be deemed operable can we to-day formulate a standardized plan or plans of procedure? There is no question that from a purely theoretical standpoint the abdominoperineal operation of Quenu, or its modifications, in one sitting is ideal. By this method it is possible to excise not only the growth and adjacent structures, but also the main lymphatic channels and glands lying in the hollow of the sacrum and those that follow the course of the nutrient vessels behind the rectum and lower sigmoid, and also to remove a comfortable margin of the levator ani.

Unfortunately the mortality of this operation is uniformly high in the best hands. Miles' mortality is 22% and is considered low for this operation. Mayo's mortality was over 30% and was cut to less than half of this figure by making it a two-stage procedure. The high mortality of the operation is not so much a question of skill or technic, as it is an inseparable consequence of (1) the age and condition of the majority of these patients, (2) the shock of so extensive a procedure, (3) the liability to hemorrhage which is damaging to the chances of recovery, if not fatal of itself, and (4) the almost insuperable difficulties in the way of maintaining an absolutely aseptic technic, which is much more important to the retroperitoneal cellular tissues than it is in intra-abdominal work where the peritoneum more easily disposes of a minimal amount of contamination.

It seems necessary therefore, to modify the ideal operation in the direction of a smaller operative mortality. The most important step, and one which can be taken without sacrifice of any of the principles underlying ultimate cure, is that which has already been urged, namely, the preliminary colostomy. This step enabled the rectum and lower sigmoid, which have been thus sidetracked, to be cleansed and brought into a condition of relative sterility. The wound is kept free from fecal contamination after the next and more serious operation, preventing infection and absorption of toxic products. It also simplifies the problem of feeding the patient, a matter of considerable importance in the debilitated and aged.

The second stage has to do with the removal of the growth, the adjacent tissues and the efferent lymphatic area. It must be granted again that on theoretical grounds the complete abdominoperineal operation of Quenu, or one of its modifications in unessential detail, conforms most nearly to the known requisites of cancer surgery.

Unfortunately again, even when performed in two stages the mortality while considerably reduced, it still more formidable than we should be satisfied to accept. There are few surgeons who can show a mortality as low as 15% for this operation, and the majority are much above that figure. It is worth mentioning in passing that all these operations are much safer in the female than the male sex and greater liberties may therefore be taken in planning and executing wide excisions.

The problem therefore reduces itself to this: in what direction may we safely modify the theoretically complete operation without unduly sacrificing the chances of escaping recurrence? In the very low and the very high growths the question practically decides itself. Anal epithelioma is best excised from below by a procedure such as the Cripp's operation. Complete and bilateral removal of the inguinal and femoral lymphatic bearing tissues of the groin should be coupled with the excision of the growth. Preliminary colostomy is rarely necessary.

The very high growths located at the rectosigmoid juncture must be reached through the abdomen. The retrorectal and sigmoidal tissues should be removed en bloc. If at least a half inch of uninvolved peritoneum-covered bowel can be left distal to the growth, the operation is concluded by an immediate anastomosis preferably by the tube method popularized by Balfour.

If the growth be lower, involving the pelvic floor, the sigmoid is mobilized with due regard for its blood supply, the growth and its adjacent lateral tissues are freed from their attachments, the abdomen is closed, and the tissues to be excised are removed from below by either vaginal, perineal, coccygeal or transsacral incision. Faggé has demonstrated extension of carcinoma two inches below the growth but in this type of case it is usually possible to remove so much or more of the rectum and still have sufficient of the lower rectum for anastomosis with the mobilized sigmoid, or at least to preserve the sphincter apparatus and anal canal and draw the sigmoid through it in the manner recommended by Mayo. In this type of case therefore, if not so far advanced as to render hopeless any attempt to prevent recurrence there is proper ground for believing that the anus may be preserved in its normal situation with a good prospect of both function and freedom from recurrence. Also in very early growths and those localized to the upper ampulla at least three inches above the anal canal, in other words those which are in reality derived from the rectosigmoid junction on the rectal side, one may employ the same procedure without feeling that it is probably sacrificing the ultimate outcome.

However, in growths of the ampulla proper, wherever situated, it is our belief that any attempt to save the perineal anus should be renounced, unless the patient, after the situation is carefully explained, still refuses to consider a permanent abdominal opening. Hartwell, in a considerable series of cases operated upon by various New York surgeons found local recurrence the rule and concluded that a very considerable part of the lamentable result was traceable to preservation of the anus. Miles had 55 recurrences in 58 cases during his earlier work, a majority being due to incomplete removal of the lower segment.

We cannot but regard, therefore, the recent suggestion of Bevan relative to removal of carcinoma by cautery through an incision in the posterior wall of the rectum as anything but dangerous teaching. Also the impression given by Crile in his recent article in the Journal of the American Medical Association (July 31, 1920) that the anus is always preserved by anastomosis with the mobilized upper segment is to be deprecated. Any surgeon who would remove a primary carcinoma of the breast by simple excision of the growth, or even of the breast, on the ground that it was early or local or the complete operation too disfiguring would receive deserved criticism. Agnew removed hundreds of breasts by simple excision and was willing to admit that he had never cured a case by this method. The importance and desirability of retaining normal anal function should not blind us to the fact that the situation is similar in cancer which happens to arise in the rectum. The fact that an anastomosis can be safely done after cleansing of the lower bowel by interrupting its function as a canal for feces has no bearing on its advisability from the standpoint of recurrence.

What should be our attitude towards the abdominal part of the complete operation? In well developed cancer of the upper half it is practically obligatory unless general contraindications such as age, debility and obesity exist. In cancer of the lower half, especially if early and no lymphatic enlargement demonstrable by exploration at the first stage, we believe that the greater mortality of the abdominoperineal operation justifies contentment with the complete excision from below by some such radical removal as that recommended by Lockhart-Mummery. The excision of dangerous tissues as far up as the promontory of the sacrum may be made almost as complete from below as when the abdomen is opened. The mortality is certainly much less and it is doubtful if the ultimate result in cancer which has spread above the promontory of the sacrum would be much improved by an intra-abdominal dissection.

I have dealt with principles and broad outlines only because the situation is much obscured by the mass of operative variations and detail which have been elaborated. I have not mentioned radium or roentgenotherapy because it is settled that they are not specific for the adenocarcinoma of the rectum and their minor rôle as adjuncts remains to be determined.

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DISCUSSION

Dr. J. Elmer Porter (Pottstown): Dr. Pfeiffer has very thoroughly presented the subject, and I want to congratulate him upon the same. There are just two points that I wish to mention or repeat with the idea in mind of further impressing the profession.

First: The matter of making as a routine the examination of the rectum with the gloved finger or speculum or both of every patient coming to you for symptoms of rectal disease. In other words, the early diagnosis of this disease means so much to the patient and will prevent in many cases the hopeless cases appearing in the surgeon's office for relief, many of them inoperable at the time. Cancer of the rectum in the beginning is absolutely a local disease and as such early diagnosis means so much for the patient and the ultimate cure.

Second: The exploratory abdominal median incision should be the rule and not the exception. This gives us the opportunity to examine thoroughly the rectum and adjacent organs, the liver, etc., for signs of secondary involvement; also to determine whether we have a second growth higher up or greater disease than the rectal or the combined rectal and vaginal examination leads us to suppose.

Having decided upon an operation, we should carry out the broad principles of surgery laid down by experience in treating carcinoma of the breast, uterus, etc. The removal of the diseased tissue should be as thorough as possible, removing boldly adjacent lymphatics and tissues, paying little attention to preservation of sphincter and anus, lest we defeat the very object of the operation and sacrifice our patients to the return of the disease and horrible death therefrom.

Again, the operation should be performed only by a surgeon of experience. The two- or three-stage operation has the lowest mortality and is generally preferred.

An articial abdominal anus in the left iliac region is the most satisfactory.

I have great hopes for these patients in the future use of radium.

Dr. Pfeiffer (in closing): I am sure that everyone in this section realizes the difficulties which beset us in connection with cancer of the rectum. Thus far it has been impossible to arouse enough general interest among the profession to secure a reasonable proportion of cases early enough for effective surgery. In all fairness, however, we must admit that there has also been a certain amount of neglect of this important subject on the part of the surgeon. The proctologist with sufficient surgical experience to handle this difficult and as yet unstandardized type of surgery is rare, while the general surgeon has had his enthusiasm curbed by the stage of the disease in which the patient too often seeks his services, as well as by the high mortality and frequent disappointing results which have haunted the surgery of cancer of the rectum in the past. We are at present in the beginning of an era of improved rectal surgery. The possibilities of total cure with future lives of comfort and usefulness are much greater than are at present realized. It is necessary that we coöperate to dispel the pessimism that exists to-day and serves to delay proper progress in this field.

THE ETIOLOGY OF CONVULSIONS IN INFANTS*†

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When a physician is called to see a child with convulsions his first duty is to apply methods of treatment which tend to alleviate the acute condition. When the convulsion has ceased the physician's work has just begun. A convulsion is merely a symptom and its etiology should be sought in order not only to prevent, if possible, a return of the symptom, but also rationally to direct treatment of the underlying cause. The serious question of prognosis is intimately associated with etiology.

The great frequency of convulsions in the child as compared to the adult is well recognized. It is perhaps not as well known that there is a distinct curve of frequency. With the exception of the first few weeks after birth convulsions are relatively uncommon during the first six months of life. After this time and up to the second year of life is the period of greatest frequency. This fact should be borne in mind for it must be accounted for before one can accept any theory which attempts to explain why the period of infancy is one which predisposes to the convulsive state.

OLDER THEORIES

That there is imperfect development of the nervous system in the infant, that there is instability of the nerve centres dependent upon lack of development of the voluntary centres of the cortex is true; but such facts do not by any means offer the entire explanation which we seek for the frequency of convulsions in early life. Soltmann's hypothesis was an ingenious one. He found that in newborn dogs, cats and rabbits the motor cortical areas could not be excited electrically, and were probably incapable of functioning. Therefore they could not exercise an inhibitory influence upon the subcortical centres. By comparing medullary striation in animals and human infants it could be shown that the human infant requires from twelve to eighteen months to attain the stage of development comparable with that in an animal in which irritation of the cortex produces movements on the opposite side of the body. Furthermore, the irritability of the peripheral nerves attained the maximum at a more rapid rate than the full development of the inhibitory centres. This increase in peripheral irritability combined with a lack of cortical inhibition appeared to Soltmann to explain the frequency of convulsions in infancy.

Two other theories should be mentioned. Convulsions in the first years of life have been considered as merely a special form of epilepsy which had a more favorable prognosis. The auto-intoxication theory explains convulsions as due to the presence in the blood stream of bacterial toxins or chemical substances such, for example, as acetone, carbon dioxide or ammonia. None of these hypotheses are adequate to explain all convulsions and none of them offer any interpretation of the curve of frequency in its relation to age.

ORGANIC CAUSES

The causes of convulsions are ordinarily divided into organic and functional, the distinction being the presence or absence of an organic lesion. Among organic causes should be mentioned meningeal hemorrhages occurring at the time of birth, meningitis and cerebral abscess and other conditions causing inflammation of the brain and meninges, such as acute encephalitis, polioencephalitis, the pathologic cerebral processes due to hereditary syphilis, hydrocephalis, microcephalis, increased cerebrospinal fluid occurring in the course of certain acute infections, brain tumors, tetanus neonatorum, embolism and thrombosis. There are certain other rare organic causes. We have witnessed convulsions in a child in whom exposure to cold apparently caused a marked increase in the amount of cerebrospinal fluid. Holt mentions his observation of convulsions due to encephalopathy as a result of lead poisoning from sucking the paint on a crib.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 7, 1920.

†From the Medical Service of the Children's Hospital of Philadelphia.

"FUNCTIONAL" CAUSES

Many convulsions occur in infancy which are spoken of as functional (reflex or peripheral). Thus a child would be classed as having a functional or reflex convulsion when he has been frightened, or had been exposed to unusual excitement, or has a long prepuce, or is teething, or has intestional parasites, or has been overfed, or is suffering from an acute digestive upset, or is in the stage of onset of an acute disease such as pneumonia or scarlet fever, or has a foreign body in the ear or nose.

Even following such a division into organic and functional certain convulsions are difficult to place; for example, the convulsions that often end fatally associated with enlargement of the thymus.

THE TRUE CAUSE OF THE SO-CALLED FUNCTIONAL CONVULSION

One must find a better explanation of convulsions called functional than the imperfect development of the infant's nervous system. Such a theory does not elucidate the established fact that convulsions are uncommon in the first six months of life, but are observed with increasing frequency after that time until two years of age. If one will remember the age incidence and what is known of the etiology of the spasmophilic diathesis, and will then attempt to discover the symptoms and diagnostic points of this condition in the patient it will be seen that the causation of most of the so-called reflex convulsions can be explained.

THE SPASMOPHILIC DIATHESIS

The spasmophilic diathesis must be considered. This term covers certain convulsive conditions which take different clinical forms such as laryngospasm, tetany and eclampsia infantum. Of the etiology of the spasmophilic diathesis the most that can be said at present is that the evidence shows that it is probably due to some fault in the metabolism of the mineral salts, especially calcium. Its association with rickets, a disease also due to improper salt metabolism, is an outstanding fact. Every child manifesting symptoms of the spasmophilic diathesis also presents evidence of rickets. In common with rickets the spasmophilic diathesis begins to show its symptoms during the latter half of the first year, and is rare before this time.

Laryngospasm is the most common active manifestation of the condition. This is usually in a mild form consisting in attacks of crowing inspiration. The spasm of the larynx may be more severe and cause complete cessation of respiration for a short time. Rarely, death occurs. In tetany there is a characteristic spasm of the hands and feet (carpopedal spasm) lasting for a variable length of time. In a typical case the wrist is flexed and turned outward, the thumb is drawn into the palm of the hand and the fingers are flexed at the metacarpo-phalangeal joints but extended below this. Comparatively the same position is noticed in the foot—that is at the ankle the position of equinovarus is assumed; the toes are fixed at the metatarso-phalangeal joints and extended below this. In eclampsia due to spasmophilia localized twitchings or generalized convulsions accompanied by loss of consciousness are present.

In spasmophilia there are three diagnostic signs which depend upon the increased mechanical and electrical excitability of the peripheral nerves. Chvostek's sign consists in tapping with the finger or hammer a superficial nerve trunk. If the sign be positive this causes a contraction of the muscles supplied by that nerve. The facial is the usual nerve employed as it emerges close to the surface at the outer part of the cheek, and the contraction is observed at the corner of the mouth or the eye. Trousseau's test is performed by making elastic constriction at or above the elbow for several minutes. If the sign be positive the hand will assume the characteristic position of tetany described above. Both Chvostek's and Trousseau's symptoms are often negative but the presence of tetany may be demonstrated by the electrical phenomena of Erb. Briefly stated the most important diagnostic points in the electrical reactions consist in the presence of a cathodal opening contraction with less than 5 milliamperes of galvanic current in infants under one year of age, and an anodal opening contraction which is less than 5 milliamperes and also less than the anodal closing contraction. We believe these findings to be practically pathognomonic of spasmophilia. In children suffering from convulsions due to epilepsy and meningitis we have been unable to demonstrate the reactions characteristic of spasmophilia.

When the proper electrical reactions are present the infant may be assumed to belong to the spasmophilic diathesis even though the other signs are negative and the symptoms of tetany, laryngospasm or eclampsia have never developed. In such a case the patient may be spoken of as having latent spasmophilia. Every child suffering from a so-called functional convulsion should be suspected of belonging to the spasmophilic diathesis and the characteristic signs and symptoms sought for. The typical position of the hands and feet may be present for a short time only and thus elude observation. Symptoms of laryngospasm are perhaps to be found in the history. Even in the intervals of attacks the electrical phenomena may be found.

EPILEPSY

There is one disease which has not been mentioned as yet, and which must be considered because its chief symptom is convulsions. A certain number of infants having convulsions will eventually become epileptics. There is probably no connection between spasmophilia and epilepsy. That is to say, the convulsions of spasmophilia do not predispose to epilepsy. Certain writers on epilepsy consider that the convulsions occurring in infancy coincident with digestive disorders or distention or other so-called reflex causes are the etiology of epilepsy—in other words, infantile eclampsia prepares the ground for epilepsy. We do not believe this to be true. Although it would not be impossible that the subject of spasmophilia should also be an epileptic, an epileptic who had convulsions in infancy in all probability had epileptic convulsions at that time.

From the type of convulsion it is impossible to differentiate between spasmophilia and epilepsy. In both conditions there may be generalized convulsions attended by loss of consciousness. Certain points may be of help in the differential diagnosis. The most disputed is the age of onset of the convulsions. It had already been pointed out that in spasmophilia the age incidence is between six months and two years. In epilepsy on the other hand one cannot state the age of onset with as much certainty. The opinion of different writers differs widely on this subject. By some epilepsy is considered a disease of later childhood, by others it is thought that the majority of epileptics have their first seizures in infancy. Epileptic convulsions are much more likely to occur without an apparent exciting cause; whereas the eclamptic attacks of spasmophilia seem to depend upon so-called reflex irritation such, for example, as is present in an acute intestinal upset or at the onset of an acute infection. If the characteristic carpopedal spasm of tetany is present during the convulsive seizure the diagnosis of spasmophilia is clear, but in any event the other diagnostic signs should be looked for. A family history of epilepsy or other nervous affection would throw the suspicion of epilepsy upon convulsions occurring at any time of life.

The best proof in a given case that epilepsy is the cause of the early convulsions would be the persistence of convulsions past the age of liability to spasmophilia. We have been able to obtain the subsequent medical history of about twenty children from two to five years after their discharge from the Children's Hospital. While in the hospital these patients had been the subject of convulsions and were selected for study because they had no demonstrable organic cause for these convulsions. Only two of the children had convulsions after they passed the age of twenty-six months. One of these was a child who had during its life four convulsions, the last one at the age of eight years. At the age of eleven years there had been a period of three years without convulsions. The other child was a member of a family in which the father and one sister also had convulsive seizures, and was evidently an epileptic. Convulsions occur in certain infants in whom none of the symptoms or signs of spasmophilia can be demonstrated and in whom epilepsy never develops.

SUMMARY

Etiologically convulsions in infancy may be divided into several groups—those due to organic causes, those due to spasmophilia, those due to idiopathic epilepsy and those due to reflex causes. The majority of babies between six months and two years of age in whom no organic basis for convulsions can be demonstrated, can be shown to be suffering from spasmophilia. Spasmophilia is the real cause of most of the convulsions ordinarily classed as reflex. A certain proportion of infants who have convulsions are epileptic, but the number is small as compared to the total number of infants who have eclamptic attacks.

Occasionally an infant who has convulsive seizures is neither an epileptic nor a spasmophilic subject, and it is only in such a case that the term "reflex convulsion" is justifiable.

We wish to thank Miss Doolittle and her workers in the Social Service Department of the Children's Hospital for their assistance.

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DISCUSSION

Dr. Harry Lowenburg (Philadelphia): I am sorry that Dr. Weisenburg did not hear Dr. Mitchell's paper because it seems to state the situation so well. He is to be congratulated upon it.

There is one point that comes to my mind and that is I would suggest to him that if he is engaged in this work to take up the study of the electrical reactions in epileptics. I feel that this may be a means of doing much to classify these children with convulsions as spasmophilics or as epileptics. I do not know whether any work has been done on the study of the electrical reactions in epileptics. There is another thing: I think the electrical reactions are the most important distinguishing factors of spasmophilia. The facial phenomenon I have seen in tubercular meningitis, but whether that child was a spasmophilic or not I do know. I do not feel that the phenomenon belongs absolutely to spasmophilia.

I am sorry that he did not take up the treatment of spasmophilia which I think is important and as stated in discussing Dr. Weisenburg's paper, we can positively follow these spasmophilic cases to recovery. We can see electrical reactions gradually becoming better if we institute proper treatment and this entails the increase of calcium in the body by the administration of calcium bromide, cod liver oil and phosphorus. What the underlying cause of spasmophilia is has not been traced, but the diathesis can be made to disappear.

Dr. Theodore Diller (Pittsburgh): I should just like to ask one question as I am very ignorant regarding spasmophilia. It is an entirely new thing to me and I am glad I came here this afternoon.

I should like to know whether I understand the thing aright. It is, as I gather from the discussion, two things—a peculiar predisposition to convulsions and also a peculiar form of convulsions which is more or less evanescent and which will disappear. Am I right?

Dr. Mitchell (in closing): In regard to Dr. Lowenburg's remark I might say that a fairly careful search of the literature has failed to reveal any work that has been done testing the electrical reactions for convulsions due to other causes than spasmophilia. Dr. Barber and I have been able to study a few cases where the convulsions were due to organic causes such as meningitis and other cases which we felt were epilepsy. In these cases the electrical reactions were not those characteristic of spasmophilia.

The point I was trying to emphasize was that the term "reflex convulsion" is often incorrectly used. In the majority of cases convulsions which are not due to organic causes or to epilepsy are due to spasmophilia. Careful study of most cases will show that the baby is suffering from spasmophilia. Therefore it is only when everything else can be excluded that one should use the term "reflex convulsion."

Dr. Barber (in closing): From the convulsion itself it is impossible to tell whether the child may be having an epileptic convulsion or what type it is. We study it by electrical reactions. The clinical type may be just the same. There are several points which help in the diagnosis. The convulsion due to spasmophilia is apparently produced by some such cause as a digestive upset or an acute contagious disease; whereas the convulsion of epilepsy usually comes without any apparent cause. Spasmophilia is a disease which occurs usually at the age of six months to two years. Most of the cases get well by that time. Convulsions occurring in children of five or six years are not due to spasmophilia in all probability. These points help in the diagnosis.

NECESSITY OF MORE STRENUOUS EFFORTS TO REDUCE THE INFANT MORTALITY RATE*

Z. R. SCOTT, M.D.

PITTSBURGH

In looking over the infant mortality statistics of the state of Pennsylvania for the last several years, it is surprising to find how little has been accomplished in this rich field of preventive medicine. In spite of the increasing interest and large amount of money spent on this work each year the results have not been satisfactory, as will be shown by the following percentages:

Year.	Total births.	Total deaths.	Per. of births that die during first year.	Per. of total deaths that were under one year of age.	Per. of infant deaths due to gastroenteritis, prematurity and congenital debility and pneumonia.
1906	167,265	114,435	16.6	24.4	61.6
1910	203,510	119,815	13.9	23.7	67.3
1918	220,170	187,951	15.	15.5	64.7
Average			15.2	21.6	64.5

Taking the average for three years, which would probably be a fair average for the entire period, we find that 15.2%, or one in every seven children dies during the first year; that 21.6%, or practically one in every five deaths is under one year of age; and that 64.5%, or thirteen in every twenty deaths under one year of age are due to the three above mentioned conditions which to a large extent are preventable. These figures are sufficient to show what progress has been made during the thirteen years up to 1919, which I think you will agree is not very encouraging.

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Up to 1915 there had been no survey made of the various welfare societies operative in the state and therefore previous to this year we can only conjecture as to the number of such organizations that were active and what they accomplished. However, it is reasonable to assume that a high percentage of the welfare societies that existed in 1915 were operative during a number of years previous to this date. In 1915 in municipalities of 10,000 or over there were 120 known municipal and private welfare agencies and this does not include a large number of unlisted private agencies, which no doubt were doing a great deal of good work. During this year there were 9,390 infants under one year of age cared for by these organizations. In addition to these we have such agencies as Little Mothers' Clubs, Womens' Industrial Clubs, Associated Charities, Settlement Houses, Visiting Nurses Association, Social Service Bureaus, etc. As an example of what some of these agencies are doing statistics show that during 1915 in Philadelphia, Pittsburgh and Reading, the Little Mothers' League instructed 13,00 girls of school age in infant hygiene.

In spite of all this work by both public and private welfare organizations active in practically every community we have not succeeded in reducing the infant mortality rate to any appreciable extent. In this day of preventive medicine the above showing is very unsatisfactory and it does not seem that this fertile field has received the concentrated attention that it deserves. Hunter Dunn states in the opening chapter of his work on "Pediatrics," that "just as the highest aim of medical art should be directed to the province of preventive medicine, so the highest and most practical branch of preventive medicine should consist of the study of the best means for starting young human beings in life. They should be preserved from the perils which surround the early hours of their existence and be given strength and vigor to resist the attacks which must inevitably be made on their vitality, which are greater and more dangerous in inverse proportion to their age." If the ideal, as set forth in this paragraph, were constantly kept before us I am sure it would be a strong incentive to carry on this important work more effectively. The propelling force of this work must be the medical profession and it is incumbent upon the physicians of this generation to see that the present mothers and mothers of future generations are taught the best means, both prenatal and postnatal, of caring for their infants.

It is reasonable to assume, from the character of the high percentage of infant deaths, that more intelligent care will prevent a certain proportion of this unnecessary waste. Then the question naturally arises, how are we going to secure for these unfortunate babies more intelligent care? It is generally admitted that education is needed in order to reduce the high mortality among infants, but this does not necessarily mean that it is only the present mothers and grandmothers that must be educated, but more especially the mothers of the future. The public school of our land is the institution we look to for the education of the children, and is therefore the logical place to install a system of education designed to educate the future mothers as to the best means of caring for their babies.

It is as much the right of the present and future mother that she should be given these educational advantages as it is the right of the elementary school child to receive its education in the public schools. After all, the child is the asset of the state and we want the state to realize that the welfare of the child is its business. During the war when the state wanted men to fight it put its hands on their shoulders and took them without any question, now we want the state to realize its responsibility to the children in exactly the same way.

The arts of cooking, sewing and caring for the house are a very essential part of our educational system and go far towards making the home attractive and happy, but are not to be compared in importance with the education of our school girls along the line of home nursing, sanitation, maternity and care of the baby. We are perfectly satisfied that by teaching household art in the public schools girls can be given a wonderful training which will be of untold value to them in sharing the responsibility of the home. Yet these same girls have a much better opportunity of learning household art at home than they have of learning the principles of motherhood.

What would be the future results in scientific development if science were eliminated from the schools? Can we say that the time spent on Latin and other less essential subjects in the schools is as well spent as it would be if such time or a part thereof, were devoted to subjects directly concerned with the saving of human life? Still a high percentage of children would receive just as good an education in Latin, if it were left to home training as they do in sex education. Subjects in the school curriculum containing material of little practical value should be eliminated and that time spent on the subjects which will meet the maximum of social needs. Habits of attention, concentration and logical reasoning can be cultivated on subject matter which is of practical value as well as it can on material which is useless for any other purpose.

The argument has been advanced that sex problems, maternity, infant care and allied subjects should not be discussed before young girls because they are liable to misinterpret the meaning. When such ideas are eliminated this important subject will quickly assume its proper place in our educational system. Previous to the war the mere mention of these subjects was sufficient to arouse protest from a large portion of public school teachers. This opposition was due to several factors: (1) failure of teachers to realize the seriousness of the problem and the disastrous results that arise from lack of information or from misinformation on these subjects; (2) improper solution of the methods of instruction; (3) lack of proper understanding of the various sex problems; (4) lack of properly prepared teachers of welfare hygiene. Recently the situation has changed and educators generally have assumed a different attitude toward this subject as will be shown by the following resolution, which along with other resolutions dealing with sex education, was adopted at a joint meeting of the Bureau of Education and U. S. P.H.S. held in Chicago, January, 1919, viz: "That as soon as properly prepared teachers are available a course in domestic science for girls in either the junior or senior year be provided which will include a study of home nursing and sanitation, maternity and care of the baby."

The best education is that which helps people to help themselves. Why should we not prepare these future mothers to carry out successfully the most important function of nature? There is no other subject in a girl's life more important and about which she receives less fundamental instruction.

When we consider that an average of 7,920 infants under one year of age die in this state from diarrhea and enteritis each year, we can easily see that if nothing else were taught than the importance of breast feeding we would in a short time reduce this unnecessary waste. Experience shows that almost every baby born will thrive on the breast milk that it is rightfully entitled to during the first year, provided it is properly cared for. Therefore, if every baby is given this chance, it will go far toward solving the problem of infant mortality.

Emphasis on the importance of breast feeding should not alone be taught to the laity, but more stress should be placed on this branch of preventive medicine in our medical schools. Too often we see cases doing badly and find in taking the history that breast feeding was stopped on recommendation of the attending physician before all means had been used to nourish the child in the natural way.

More strenuous efforts applied along the line of the present welfare work with the additional advantage bound to result from welfare education in the public schools, will undoubtedly produce a substantial reduction in the infant mortality rate. In no other field of preventive medicine can we be more certain of the value of our efforts. This alone should be sufficient inspiration to assure success for this work.

DISCUSSION

Dr. Henry T. Price (Pittsburgh): It seems that the medical profession has not given the attention to preventive medicine in infant mortality that it should, and especially at this time when we are doing so much in preventive medicine.

Dr. Scott has brought out one point particularly and that is the subject of maternal feeding. I do not need to go into that any more than Dr. Scott has because most people appreciate that such results can be obtained. The old story that a number of women do not desire to nurse their babies I think is being discredited and very few mothers now do not try to nurse their babies and very few of these mothers will not be able to nurse their babies if they have the proper assistance and encouragement from their physician.

Some time ago I heard the remark made that the infant mortality in this state had been greatly decreased and I think that is one of the things that we are looking for in this state but statistics are not available and I feel within the next five years that these figures that Dr. Scott has presented to us for the state of Pennsylvania will show a very marked improvement.

Dr. Percival J. Eaton (Pittsburgh): I did not hear Dr. Scott's paper but I want to reply to one remark that Dr. Bentz made and that is in regard to teaching these things to the young women in school. Several years ago, it was my good fortune to be asked to talk to the girls in the Margaret Morrison School here in Pittsburgh. I was sort of a free lance and was told to tell things that I judged would be best for them. I gave them a course in hygiene, physiology, etc., and I taught them as much as I could of these things which would come up to them in the future. It was a question in my mind how much good that might do, but I want to assure Dr. Bentz and all of you that I have seen in the years which followed the results of that teaching, because many of those girls afterwards got married and had children and I have been called in and heard this remark made: "When I came to have my baby I remembered many of those things you used to tell us in a general way." So I believe that the thing can be worked out so that we can teach many of the things which are going to directly influence the mortality among infants. I think the more we can put into the minds of the young men and the young women as to the necessity of these things the better it will be for the race.

I also want to call attention, perhaps Dr. Scott did in his paper, to the fact that in this country the agencies at work for the reduction of infant mortality are growing very rapidly. We have the state and the city organizations of similar character and I think in time they will be correlated. In this state, under Dr. Hamill, we have been having county centers formed and while the work is not at all as good as it ought to be, still it is a beginning. I believe this sort of thing is going to spread all over the country and seems to me advances along that line will be on the same scale as the advances in suppression of diseases. I am sorry I could not hear all of Dr. Scott's paper.

Dr. William N. Bradley (Philadelphia): I think the paper has very important points. I could spend an hour on each one which is valuable in itself. I just want to emphasize everything that he said.

It is too bad that doctors who class themselves as pediatricians are so slow to take up more intensively the subject of preventive work among children. There is not in it perhaps the appeal of things more dramatic and spectacular but in the years to come I am sure that the statistics which we will be able to show will be as spectacular as anything we could desire.

Dr. J. W. Wright (Erie): I am very glad to be able to add one bright spot to the statistics presented. In regard to our own local statistics, we were able to reduce our infant death rate 33% in one year.

We have inaugurated in Erie some very active infant organizations and they have taken more active control of our mothers. I think as long as we have the foreign population, midwives will require very active supervision. These midwives are followed up very closely and are prosecuted immediately if births are not reported. The result has been that their cases are under control both before and after births. We have inaugurated a system of combining our visiting nurse work with our city infant welfare work. The city pays the salary of some of the visiting nurses who all, in turn, become sanitary police officers. I think that takes care very well of that condition that was mentioned of poor sanitary surroundings for the babies in the home. I mention these things in passing because they have helped in reducing our infant mortality. We hope to extend our work through the county, by such agencies as the Red Cross and Commissioner Martin's County Health Committee.

MELANOSARCOMA OF THE CHOROID*

EDWARD STIEREN, M.D.

PITTSBURGH

According to Collins and Mayo, sarcoma of the uveal tract is a comparatively rare disease. The anterior parts of the tract are much less frequently affected than the posterior, and malignant growths arising from the pigment epithelium are exceedingly rare.

Sarcoma commencing in the choroid begins by spreading laterally and forming an elliptically shaped thickening. The resistance to its extension is greater on the outer surface where it has the firm sclerotic than on the inner surface where there is only the elastic lamina and retina. The elastic lamina becomes, therefore, raised up by the growth until the tension is so great that it ruptures. Restraint being removed the growth then develops rapidly into the viterous chamber.

In sarcoma of the choroid the retina soon becomes detached and all detachments of the retina should be viewed with suspicion, especially those in nonmyopic eyes.

In the following case the eye had been blind for three years and the only symptom which brought the patient was a violent edema of the conjunctiva and lids.

Charles K., age 38, appeared Jan. 5, 1920, with an intense edema of the left ocular injunctiva and moderate swelling of the lids. The eye had been blind for more than three years, had never suffered trauma and had never been painful. The pupil was moderately dilated and fixed, the anterior chamber shallow and the aqueous cloudy. The cornea was clear and the viterous by direct transillumination was brownish red. Tension 24 Mg. McLean, no pain on palpation or deep pressure, no inflammation of any of the ocular structures. Under constant moist Ochsner compresses the edema steadily progressed and the eye was enucleated a week later, followed by prompt subsidence of the edema.

The globe was given to Dr. Jacob Rockman for laboratory study and his report is appended. It will be noted that on sectioning the globe the vitreous appeared to be filled with a more or less recent blood clot and it was thought, until the microscope proved otherwise, that the case was merely one of mammoth hemorrhage into the vitreous.

Macroscopy: Eye received in alcohol 50% (2 days) after enucleation; has soft doughy feel; put in 4% formalin. Eyeball sectioned in a horizontal plane above the optic nerve. The sheath about the nerve is thickened. The interior of the eye is filled with a firm, dark brown chocolaty colored clot firmly adherent to posterior wall of the eyeball, soft and friable anteriorly where it abuts upon the detached retina which is very much thickened, grey and lustreless and soft and friable in consistency. The structures of the anterior segment are thickened and disorganized. The lens is much thickened, having a spherical contour and is smoky, opaque and brittle.

Microscopy: There are present irregular islands of cellular tissue broken up by areas of hemorrhage, for the most part recent in origin. The cellular areas are composed of cells of connective tissue type, many spindle shape, in compact columnar order with large, deep staining nuclei. Some of these cells are covered or filled with coarse yellow brown pigment, apparently melanin (not giving reaction from iron). Many of these cell areas are advancedly necrotic. Aside from the extravascular hemorrhage there are many very *thin walled sinuses distended with blood.* There is no invasion of the outer coats of the eye, the nerve trunk or the retina.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 7, 1920.

Diagnosis. Melanosarcoma of choroid.

DISCUSSION

Dr. Edward A. Shumway (Philadelphia): I had the opportunity of examining the sections of the growth in Dr. Stieren's case, and can corroborate the diagnosis made by the pathologist. There is comparatively little pigment in the cells, so that it is to be classed as an almost non-pigmented growth. These non-pigmented or leucosarcomata are found in only 12 per cent of the cases. Sections of the tumor connected with the original site in the choroid show it to be spindle-celled in type, but in the portion from the interior of the eye the cells are more round in form, and the mass shows large blood vessel sinuses, necrosis of the cells and hemorrhage. These are important matters and bear particularly upon the point which I think should be emphasized in connection with the case, and that is the necessity of suspecting a choroidal sarcoma in an adult, in a blind painful eye. Especially important is it when there is a history that gradual oncoming blindness has preceded the painful attacks, or where a detached retina has been previously diagnosed. Sometimes, as I have repeatedly seen, the condition is complicated by a positive Wassermann test. In a great many instances the painful attacks are brought on by hemorrhages into the viterous part of the growth, as is shown in the present instance. Statistics have shown that in about 45 per cent of choroidal sarcomas, pathological examination reveals comparatively larger hemorrhages and some of the cases of intraocular growth may be considered by mistake to be hemorrhagic glaucoma. At times the hemorrhage may be caused by a blow or other traumatism to the eye, but again it is probably due to the necrosis of the growth, which in turn is most often due to anemia resulting from a degenerative condition of the blood vessels.

It is hardly necessary here to more than refer to the fact that in adition to these more common pigmented sarcomata of the choroid, either spindle-celled, or round-celled, which break through the lamina vitrea of the choroid and grow into the interior of the eye, we have less frequent, usually nonpigmented endotheliomata which spring from the endothelial linings of the choroidal spaces, and which do not protrude much into the interior of the eyeball but proliferate rapidly in the choroid, invade the suprachoroidal space, split the sclera, and so break through outside the eyeball into the orbit relatively early. The latter are more liable, therefore, to produce a local recurrence, while the spindle-celled, melanotic growths are more likely to give metastasis.

This section may be interested in a number of slides which I have brought with me, which illustrate well the various types of choroidal sarcoma, some deeply pigmented, some free from pigment. Some show the typical mushroom shape macroscopically, where there is a constricting band caused by the resistant lamina vitrea. One is an excellent example of a low alveolar sarcoma, or endothelioma, and one shows extensive involvement of the orbital tissue. Such a case impresses the most important lesson, that early enucleation should be performed, and if there is orbital involvement, exenteration of the orbit, and subsequent treatment with radium or the x-ray.

Dr. Luther C. Peter (Philadelphia): Several years ago a case presented itself in my clinic, a man forty-seven years of age, who had all the appearance of an acute fulminating glaucoma. The eye was exceedingly red and painful and hard. The man was an Italian. He could not speak English, so we could not get a history. The pupil was dilated, the anterior chamber filled with blood. A tentative diagnosis was made of acute fulminating glaucoma. The patient disappeared and I did not hear from him for four weeks, when he came back suffering intense pain; but suddenly the pain cleared up. Then we thought possibly we had to deal with a spontaneous rupture of the globe as a result of increased tension. The eyeball was enucleated, sent to the laboratory, and was lost in the laboratory. Three months later a request came from another hospital asking for our diagnosis of that case as the patient had died of metastatic melanosarcoma. The clinical history was exceedingly interesting, and it was very embarrassing that the specimen had been lost. From the clinical symptoms we were unable to say what we had to deal with, particularly in view of the fact that the man could not speak our language. I mention this to show that some of these cases are overlooked, or might be mistaken for some other disease.

Dr. George W. Mackenzie (Philadelphia): I should like to emphasize the point made by the essayist that in all cases of detached retina one of the first things to be thought of is sarcoma of the choroid.

The use of the Sachs transillumination lamp is indicated in all cases of detached retina. Where tumor is present, a dark shadow is observed, while in a detachment from any other cause no shadow is seen, the entire fundus presenting a uniformly red color.

In every case of sarcoma of the choroid it is well to look for secondary extraocular growths, tiny ones may not infrequently be observed about the point of egress of the long ciliary veins in those cases where the tumor has extended anteriorly as far as the ciliary body. This point has been emphasized by Salzmann and also Winterstein, and in one case of my own I was able to make a diganosis by reason of the extra pigmentation and slight swelling about the opening in the sclera through which the ciliary vein emerged.

The earlier one makes the diagnosis of sarcoma of the uvea, the better, and in the event of a positive diagnosis, the quicker the eyeball is removed, the better. Winterstein has observed a secondary growth in the liver as late as fifteen years after the enucleation of the eyeball for sarcoma.

CORRECTION

The following item was incorrectly included under "Propaganda for Reform" in the Pennsylvania Medical Journal for September, 1921. The caption should have been "New and Nonofficial Remedies."

Pollen Antigen-Lederle (Ragweed).—A liquid prepared by extracting the proteins from the pollen of the ragweed.

Pollen Antigen-Lederle (Timothy).—A liquid prepared by extracting the protein from the pollen of the timothy. The Lederle Antitoxin Laboratories, New York (*Jour. A. M. A.*, June 18, 1921, p. 1753).

RADIUM TREATMENT OF MOUTH AND THROAT*

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Radium's value in the treatment of mouth and throat malignancy has been recognized for some years, and with the adoption of the more recently perfected method of burying radium needles in the affected tissues, thus making it possible to administer a lethal or cancer-destroying dose with impunity to surrounding healthy tissue, its efficacy has been multiplied many fold, until it is now safe to award it first place in the treatment of all forms of malignant growths in mouth and throat. It is the more adaptable and serviceable in these cases because of the location of the malignancy, the frequent rapid progress of the disease, the likelihood of involvement of the lymphatic glands, and the close proximity of the growth to important blood vessels and nerves. For these same reasons it is almost unnecessary to state that specialized study, skill and judgment are required for successful treatment. Too many failures have been accredited to radium, when as a matter of fact through inexperience and lack of proper study only partial doses were given or only erythema doses that would destroy nothing except the small basal-cell epithelioma and certain types of sarcoma, when the proper understanding of the case clearly indicated the lethal dose, supplemented, if necessary, by burying radium in order to reach the deeper-seated malignant tissue, followed in from two to four weeks by the removal by electric coagulation or operation of the necrotic tissue.

End results in these cases have changed radically since it has become possible to administer positively the proper cancer-destroying dose. When intensive surface applications of radium were employed, reactions occurred not infrequently culminating in necrotic tissue which had to be removed by the knife or by electric coagulation. But by the application of the proper dosage, both on and beneath the surface, these attendant surface results are largely obviated, as few if any detrimental reactions occur that will not disappear promptly. Before burying the radium needles it is always well to apply radium on the surface and to the adjacent lymphatic glands, because this lessens the danger of metastases.

Negligence and indifference, or improper attention to innocent looking lesions, constitutes a crime against the profession. Every far advanced and perhaps hopeless case, no doubt had its inception in a very innocent looking lesion, later becoming persistent, and then through inattention or by superficial cautery or inert mouth washes the disease advancing rapidly. All precancerous areas should be looked for and treated promptly. There is no place where it is more necessary to eradicate the disease without loss of tissue. Those treating malignant growths should know, and the public rightfully expects them to know, what has been accomplished by radium, Roentgen rays, electric coagulation, and surgery, as well as the amount of harm that can be done by the erstwhile indifference or impotent cauterization.

Malignant growths may be divided into epithelioma of the lower lip, tongue, buccal mucous membranes, and carcinoma and sarcoma of the nasopharynx. While the same general principles will apply to each, there are certain technical as well as clinical differences. The mucous membrane of the mouth and throat is more sensitive to radiation than almost any other mucous membrane and the malignant tissue here is equally or more malignant. This is frequently complicated by the disease starting in a very unhealthy mouth where normal tissue is of low vitality. This probably explains why the cautery makes a small inert lesion take on such an active process which is soon beyond a curative stage. This is frequently seen when a very small lesion of the buccal mucous membrane is cauterized or even following the excision of a small epithelioma of the tongue.

It is true that cancer is a disease of old age and, in examining the mouth, it will be noticed that the tissues are often considerably older than the rest of the body. When the teeth and mucous membrane are unhealthy it is not only more difficult to eradicate the disease but recurrence is more likely.

The treatment consists of the local treatment with radium, both by surface applications and by burying radium needles, and radiation of the adjacent lymphatic glands by radium and the Roentgen rays. Without burying radium a lethal dose in the mouth cannot be given, except in very small and superficial lesions, without producing superficial necrosis of the surrounding healthy tissue. In most instances it is perfectly safe to give a lethal dose of radium by surface applications without much filtration and distance; then the necrosis is superficial and can readily be removed by electrocoagulation. This is a method I have been using before I started to bury radium and in many instances the results are equal to inserting radium in the malignant tissue. By inserting radium into the diseased tissue, the radiation is better distributed and there is not the loss by absorption and by divergence. More important than this, is the fact that the subcutaneous tissue will stand so much more radiation without injury than the mucous membrane. Even when radium has been buried, electrocoagulation is a valuable adjunct and is recommended in all cases where the reaction is slow in disappearing. By burying radium needles and using electrocoágulation, together with proper radiation of the adjacent lymphatics of both sides of the neck, more cancer tissue can be eradicated with less loss of tissue than by any other method.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 7, 1921.

Epithelioma or cancer of the mouth and throat shows itself by its progressive extension of the primary growth, and there is almost always an early invasion of the lymphatics of the neck, while, rarely, secondary deposits in distant organs or tissue occur. Formerly, it was said that there was a collar around the neck through which cancer cells rarely penetrated. This is not true because, by the older methods of treatment, death occurred from the local or regional disease before there was sufficient time for secondary deposits to become active. A review of any recent system of surgery shows that even most of the early cancerous lesions of the mouth and throat are regional as well as local when first seen. It has been said that the tongue exhibits only the visible part of the disease and there is usually a cancerous dissemination in the lymphatic spaces, the glands being invaded at a considerable distance from the primary focus, even at an early stage of the disease. It is true that the cancer-growing edge, although unappreciated by ordinary methods of examination, is just as definite as the visible edge of ringworm, and that when more than one lymphatic chain in the neck has been found to contain cancer cells, microscopically, and when the deep cervicals are involved, the cases are not cured surgically.

It is important for the radiologist to know what glands drain each area of the mouth and throat as well as that the anastomosis of the lymphatic chains in the neck are closely connected, and those of one side of the neck anastomose with the other. It would be well for everyone to make a chart of the glands of the neck, showing the distribution of the important glandular centers and study this chart until each could be visualized or until each gland could be speared and radium inserted without palpation. The lymphatics draining the lip are the submental group, which receive the vessels from the central portion of the lower lip, chin and floor of the mouth. The submaxillary, consisting of five or six glands, drain the lateral half of the lip, the cheek, part of the tongue and the lower portion of the nose. There is an anastomosis between the submaxillary glands of each side and the submental, and when one group is invaded it is only a short time until metastases spread to the next chain. There are from twenty to thirty important cervical glands extending from the mastoid process to the junction of the subclavian and jugular veins, which should be memorized and visualized. This is an important group because when these can be palpated the disease is far advanced regardless of the size of primary lesion or of the submental or submaxillary groups. The cervical glands act as a fortress to the chains above, and their removal surgically is seldom, if ever, useful.

In radiotherapy of the tongue the course of the lymphatic vessels, influencing as it does the spread of malignant cells, is of utmost importance. There are two main chains, viz, the submucous, and the intra muscular. The lymphatics from the tip of the tongue pass to the submental and the inferior cervical; those from the lateral border terminate in the submaxillary salivary glands and some pass directly into the deep cervical, while most of those in the posterior part of the tongue enter a group of glands lying between the large vessels and the parotid glands, and another group of vessels pass into the submaxillary. The vessels passing from the tongue are closely connected with glands of both sides of the neck.

The chain of lymphatics most closely connected with the primary lesion whether palpable or not should always receive a lethal dose of either radium or x-ray, even if this amount produces a marked reaction. A burn, while it should be avoided if possible, is not to be feared as much as leaving cancer cells in the first lymphatic chains. Burying radium in these areas is preferable. It is important to remember that unless all the cancer tissue is removed, it will eventually kill the patient. Then we are justified in giving a lethal dose whenever an attempt is made to cure the patient, although an undesirable skin reaction occurs, but this is not justifiable if treatment is given for palliation only.

Epithelioma of the lower lip is the most accessable of the mouth lesions and, if treatment is given in the early stage before destruction of tissue has occurred and before the lymph nodes are invaded, radium is uniformly successful. More cases can be cured by radiation without loss of tissue or deformity than by excision, although it must be remembered even in the early stage that glandular metastases may have occurred, and the glands most closely connected with the part of the lip involved should receive radiation as well as a zone of apparently healthy tissue around the primary lesion. If the epithelioma is situated on the outer half of the lip, the submental and submaxillary glands, and also the glands situated at the inner angle of the mouth should receive intensive radiation. If the lesion is situated near the central portion of the lip, the submental and submaxillary glands at both sides of the neck, and the skin from the lip to the chin, must be thoroughly radiated in both early and advanced stages. It is safer in all stages of the disease to ray a wider area of lymphatics than seems necessary, instead of waiting until distant metastases have occurred.

In the advanced cases, more can be accomplished by radiation than by any other single method of treatment alone, but it is often advisable after raying to have a modified operation performed. In carcinoma of the lip, a sufficient number of tubes should be employed to cover the entire lesion as well as a zone of healthy tissue and in advanced cases to spear the glandular junction most closely connected with the lip and to insert radium after cell proliferation has been checked by surface applications. Broder, at the Mayo Clinic, in speaking of epithelioma of the lips, states that "no patient with the cervical nodes or more than one group of any lymph nodes involved has been reported living." This is worthy of consideration, because if cases have not been cured by surgery where more than one chain of lymphatics are involved, a clinical cure by radiation has been obtained. Then the question arises in these clinically cured cases, should a block dissection be performed five or six weeks afterwards to be followed by further radiation?

Carcinoma of the tongue is one of the most difficult of the mouth lesions to treat and the most difficult in which to obtain complete retrogression, particularly if the growth is situated on the posterior part of the tongue, because even in the early cases minute processes often have invaded muscle substance for a considerable depth and because of an early invasion of the tissue towards the tonsil. Therefore, the groove between the tongue and tonsil should always receive radiation. In fact, a lethal dose to the lesion and to a large surrounding zone of healthy tissue should always be given, including an area in front of the tonsil to be followed in many instances by electrocoagulation. The method that should give the best results is extensive surface application, together with intensive radiation of the lymphatics, burying radium needles, two weeks later, in the posterior half of the tongue and in the tissues in front of the tonsil on the affected side. This should be followed in many cases by electrocoagulation.

In the treatment of the lymphatics, radiation should be as thorough as possible, and then, like a thorough dissection, it often is not radical enough. If operation is performed it should be preceded by radiation, because this should dispose of the small deposits in the glands which are not palpable or at least damage the proliferating cancer cells. By waiting five or six weeks after raying the primary growth the cancer cells are far on toward retrogression. Then there is not the same danger of spreading fresh cancer cells into an area where there are no lymph nodes ready to encapsulate them. Lately, it is claimed that the lymph nodes do for a time choke cancer cells. While radium has many shortcomings in cancer of the tongue, it is a step in advance, and with improved technic more should be accomplished in the future.

Epithelioma of buccal mucous membrane does not invade the glandular system as early as cancer of the tongue and lip, but if the disease has invaded the submucous tissue it is very resistant to treatment. When it is superficial it may be favorably influenced by one surface application of radium, but when it has invaded muscle tissue, the best results are obtained by burying radium needles or by surface application giving sufficient dosage to kill the cancer cells. Then the necrotic tissue which will always be produced by such intensive radiation should be removed by electrocoagulation. The radium reaction which is marked in these cases is painful, but after electrocoagulation this is entirely relieved and the base heals up promptly without discomfort to the patient, providing all the cancerous tissue has been destroyed. Although the lymphatic glands are not so early invaded, the glands of the neck should have the same radiation as has been described.

Cancer of the antrum and alveolar process has been made to retrogress completely under radium and, like the cheek, does not invade the lymphatic glands of the neck until the disease is well advanced. It has been stated that the disease most frequently starts in the alveolar process, often at the root of a tooth and early invades the antrum. For this reason, it is advisable if the cancer starts in the alveolar process to open the antrum through the floor of the mouth, preferably by cautery, and insert radium.

Cancer of the floor of the mouth and inferior maxilla, in both early and advanced cases, should be treated internally and externally, including the submental and submaxillary glands, to check cell proliferation. This to be followed by inserting radium into the floor of the mouth and in some instances into submaxillary glands through the floor of the mouth. The best results I have obtained in the floor of the mouth have been through the application of radium, part of the tissue being removed later by electrocoagulation. By this method one very advanced case, with palpable submental and submaxillary glands, has been cured for over two years.

Sarcoma of the tonsil is one of the most amenable lesions in the throat to treat by radium. A large mass filling the throat, which is hopeless surgically, will melt away after one treatment without leaving any visible trace of the disease. But these patients usually die of deep chest metastases within a few years. This shows the necessity of not only treating the neck, whether the glands are palpable or not, but also raying the chest.

It seems that many think it is only necessary to remove the visible part of the disease of the mouth and throat, as in the treatment of superficial epitheliomata of the face. Naturally, these radiologists are disappointed. Radium is an alterative on basal-cell epitheliomata and some sarcomas and will cause the tumor to shrink and disappear without much, if any inflammation; while in other forms of malignant tissue, such as squamous cell carcinoma, it acts as a destructive agent. This is very important in treating carcinoma of the mouth and throat where it is nearly always of the squamous type.

In summarizing, let me call attention again to the following points:

1. Improved technique has given radium the first place in the treatment of malignancy of the mouth and throat.

2. Formerly a lethal dose could not be given by surface applications without producing necrosis of healthy tissues.

3. By burying radium a lethal dose can be given without seriously injuring healthy tissues.

4. In the past the adjacent lymphatic glands did not receive any radiation, or else inefficient treatment.

DISCUSSION

Mr. Charles H. Viol (Radium Research Laboratory, Pittsburgh): At Dr. Boggs' invitation I come to say a few words in connection with the purely physical aspect of radium and its relation to the x-ray.

Of the three rays emitted from radium, only two, the beta and gamma, are useful when radium is applied locally for therapeutic effect. The beta rays are simply cathode rays moving with a much higher velocity than that of the cathode rays in an x-ray tube. They have a greater penetrating power than that of cathode rays, but even so, are rather easily absorbed and so find their main use in the treatment of quite superficial conditions.

The x-rays are produced as a result of the impact of cathode rays on the anticathode of the x-ray tube, and gamma rays are due to the forced vibrations of electrons in the atoms from which the high velocity beta rays are escaping. The x-rays and gamma rays are both high frequency or short wave length ether vibrations, differing from visible light or ultraviolet light in having shorter wave lengths. The gamma rays of radium are of shorter wave length than the hard x-rays, and have a considerably greater penetrating power. While the greater penetrating power of the gamma rays is undoubtedly of importance in the production of the superior results with radium, it is more likely that the greatest advantage which radium has over the x-ray lies in the mode of application. Radium or radium emanation can be inserted directly into body cavities or into tumors and produces very intense but localized action, whereas the x-rays must be flooded through the skin into the tumor.

The physical explanation of the action of x-rays and gamma rays is the same, and is thought to be due to the production in tissues and absorption in the cells of the secondary or excited beta rays, which are simply negative elections. This excess of negative electricity in the cells initiates the changes which, if the action is of sufficient intensity, result in the failure of the cell to function normally and so ultimately in its destruction. So far the observed differences in the results of radium and x-rays are to be attributed to the inherently different modes of application of these forces.

Dr. George M. Coates (Philadelphia): The cancer problem is always in order and probably always will be, and any data we can get on the subject to help us combat this disease is welcome. I am sure we are indebted to Doctor Boggs for bringing this subject before us and for the information he has given us.

There is a great deal for us to learn, as laryngologists, about the dosage and management of x-ray and radium, and the combination of the two. The combination of surgery, radium and the x-ray in advanced cases, and early cases too, for that matter, is important to us as otolaryngologists. A great many of these cases come to us too late, when it is hopeless to attempt to eradicate the disease by surgery alone, and in these cases I think most men now use radium as an adjunct to destroy what remaining cells there are and prevent their migration to other parts of the body.

There are different ways of treating cancer of the upper jaw, throat and nose. New, of the Mayo Clinic, has devised a method of exposing the growth freely, and coagulating it with redhot soldering irons which he leaves in position for from ten to fifteen minutes. He brought out that method at the American Medical Association in New Orleans last spring. Crosby Greene of Boston, and Barnes of Boston, expose the growth freely by the More incision, put the skin of the face to one side and enter the antrum, remove the growth as thoroughly as possible, and dress it as an open wound, leaving a large opening under the infraorbital arch by which the progress of the disease can be noted and treated at the same time. Then radium is immediately applied to destroy any possible cancer cells that have been left or dislodged by the operation and to prevent their migration. They have had some phenomenal results in a large series of cases—fifteen or more. I have seen some of them, and the patients have a permanent fistula of the face, but it is not as difiguring as it might seem.

Greene and Barnes also in malignant disease of the larynx have been using radium emanations in the form of "seeds" small glass capsules containing radium emanation. I am not a radiologist, I do not know much about radium emanations, but as I understand its action this lasts for four or five days. These "seeds" are inserted deeply into the growth and allowed to remain there until they slough out. They have had excellent results.

Sarcoma of the nose and throat seems to respond more readily to radium than carcinoma, but my own experience has been that the return of the growth is equally as prompt as its disappearance. I remember a case three years ago—sarcoma of the soft palate and nasopharnyx, a tremendous growth involving half the nasopharnyx, which had been incised as a peri-tonsillar abscess before the correct diagnosis was made. It was not altogether an unjustifiable diagnosis for the man who saw it first either ; it looked very much like it. Radium was placed in the incision which had been made and in the course of an incredibly short time—a few days—the growth entirely disappeared. That case was kept under observation for two months. He finally went on a business trip and came back in two weeks with the whole thing recurrent. I lost track of him then. The return of the growth is often just as prompt as its disappearance.

I think a word should be said about the danger of radium, because there is danger—danger with improper screening and improper dosage. A case I had this year came to me secondarily, with a history of having had a diagnosis of beginning epithelioma of the larynx, and radium was applied by an expert radiologist. When he came to me there was very extensive necrosis of the upper three or four trachell rings and the cartilage of the larynx, such destruction that a tracheotomy was necessary. Enormous destruction had taken place outside of the laryngeal cartilage and he had to be fed through a stomach tube. That patient died.

The damage from improper dosage and improper screening seems to be increasing in these cases. Of course there is no question but that radium is the thing to use. It does cure some cases and I hope it will eventually cure all that we can get at the proper time.

I had a recent case of epithelioma at the base of the tongue—a mass one and a half inches in diameter that looked like a small billiard ball. Doctor Pfahler treated that by passing radium needles into the growth on both sides of the neck and keeping them in there for some hours. I came into the case to do a tracheotomy on account of the resulting edema of the larynx. After the first application the growth had shrunken to the size of a peanut and there it is at the present time. The patient is relieved of symptoms, and it has made little progress either way since then. I should like to know what the chances are for further retrogression of the tumor, and for permanent cure. These are horrible cases and we want all the information and help we can get.

Dr. Richard E. Brenneman (Pittsburgh): Dr. Boggs has read an extremely interesting paper, but I should like to sound a note of warning. In other words, try to keep the pendulum from swinging too far in one direction. In the old days of fighting this cancer problem it was all surgery, and in the hands of some men, surgery, especially of the tongue and lip, where we get thorough dissection of the cervical lymphatics is a mighty good thing; but there are so few of us who are able to do it thoroughly that failures have been too frequent. Then we used the actual cautery, and now radium has come into rather extensive use. Although radium was discovered about sixteen years ago, yet it has actually been used in this country, with one or two exceptions, only during the last four or five years. At first it was not very successful, as Dr. Boggs has pointed out, because it was not used right. But such papers as this will help to throw more light on the subject and more light is certainly needed, for in my experience I find that medical men, as a rule, know very little about its use. One reason is that it is so expensive and hard to get.

Those who were here three years ago may remember the case of cancer of the tongue I presented to the Section. I have the pleasure of reporting that the case is still well and has no sign of recurrence after six years. This year she had made a complete set of upper and lower teeth and the irritation of the plates has not produced any recurrence As to the permanency of cure with radium, here is a case "cured" for over six years that I am glad to report.

After considerable experience I am more and more convinced that in radium we have a tremendous therapeutic agent, but as Dr. Boggs pointed out, it must be used carefully, with judgment and common sense, and with all the experience that we can obtain ourselves combined with that of other men who are using it.

Dr. Boggs lays particular stress on the use of radium needles. This is important. They were not known at first, and in this case of cancer of the tongue already referred to, the radium was buried in the tongue by splitting through the neoplasm with a scalpel thus obtaining results similar to the needle technique. This was before radium needles and radium emanation were used.

It is best to give a thorough radiation of the lymphatics before attacking the growth itself. This is extremely important, as in my experience I find that the pain of these growths is very much relieved by an application of radium in large amounts around the face and neck to the limits of the lymphatics. By thus sealing the lymphatics, new cancer cells thrown off by the treatment of the neoplasm cannot metastasize.

As to radium emanation, the gentleman who just spoke said he was not familiar with it. Radium emanation is a gas arising from radium in solution and confined in a capsule or capillary tube. This requires special equipment. To get the milligram hours you multiply the number of milligrams in one of these tubes, probably 3 or 4 by 132, and this gives you the millicure hours which correspond to milligram hours of radium element dosage.

Radium is best used as an adjunct to surgery, to prepare the field for operation and to be used prophylactically after operation, although it frequently gives brilliant results when used alone. As Dr. W. J. Mayo says, "It lessens the viability of the cancer cells." I have found this to be true, and also a point that was mentioned yesterday by Dr. Sistrunk, of the Mayo Clinic, who said that in operating on a case of epithelioma of the cerivx uteri after heavy preliminary treatment with radium, he had practically no bleeding.

Those who heard Dr. W. L. Clark's fine paper yesterday will realize the value of electrocoagulation. I think it may be a useful adjunct but am not familiar with it. It frequently requires anesthesia, and a great many of these patients object to an anesthetic. I believe the use of the electro or thermocautery is frequently beneficial, especially in upper jaw, as used by Dr. Gordon B. New, and in bladder cases.

So we have surgery alone, thermocautery, electrocoagulation of Dr. Clark, and radium; and by their use (if taken in time) alone or in combination, we should be able to reduce the present high mortality rate in cancer.

Dr. William L. Clark (Philadelphia): I am for the most part in accord with Dr. Boggs, although there are some details in which our experience differs. For many years I have used the electrodesiccation and coagulation methods as primary agents in accessible malignant disease of the oral cavity with radium as a valuable adjunct, while Dr. Boggs uses radium as the primary agent. Since, however, the advent of radium in hollow needles, many cases are treated by needles alone that were formerly treated by electrothermic methods. The choice of methods depends upon the extent of the disease, the type of growth, and the proximity to vital structures.

Cases of cancer of the mouth should receive careful preliminary study. It is my practice to have an ex-ray study made in all cases to determine possible involvement of accessory sinuses and osseous structures. Much light is thrown upon the extent of the lesion by this practice and it serves as an accurate guide as to the form of treatment to be applied. If, for example, an x-ray examination shows the lower alveolus to be involved but with some healthy bone at the inferior portion, it is not necessary to do a complete resection; but with care the diseased bone may be devitalized by means of the electrocoagulation method and in the course of a few weeks the sequestrum will separate, and it is often possible to preserve the contour of the face by conserving a shell of the mandible without the deformity which follows resection. Experience is necessary to do this with accuracy, but it can be done. If, however, the jaw is involved with disease all the way through, resection is of course imperative.

In squamous cell cancer of the mouth, whether operative surgery or coagulation is used, radium treatment should follow. There may be cells that are not reached, and we know that radium properly applied has a lethal action upon malignant cells. In malignant disease of the antrum I prefer the electrocoagulation method to the soldering irons as employed in the Mayo Clinic, since the destruction is more accurate and there is a greater penetration of heat. Radium is used following electrocoagulation treatment in all cases.

In cancer of the tonsils I use radium needles in preference to the electrothermic method and results obtained have been most gratifying. The results of treatment by radium needles in cancer of the larynx have been very promising. A preliminary tracheotomy is done in all cases and flat radium needles, which I had made for this purpose—some containing five and others ten milligrams of radium element—are inserted into the growth directly through an endoscope and it is often possible to insert the needles between the cartilage and the membrane. The retrogression of many of these laryngeal carcinomata is astonishing. It is a practice to apply cross-fire radium treatment from the outside in addition.

It has been shown that the best results in malignant disease of the mouth, jaws and throat are obtained by the judicious use of combined methods; and the methods which give the best results are operative surgery, electrothermic methods, radium and x-rays. I congratulate Dr. Boggs upon his excellent paper.

Dr. Boggs (in closing): I wish to thank the members for their free discussion. I always advocate anteoperative and postoperative treatment. In fact, anteoperative raying is the most important because, it checks cell proliferation. In regard to Doctor New's excellent work on cancer of the antrum I wish to state that I was at the Mayo Clinic within the past month and witnessed one of his operations done by cautery. Afterwards the antrum was filled with radium tubes. He gives large doses of radium. The chief advantage of opening the antrum is that radium can be inserted and a lethal dose be given.

In regard to the patient mentioned where there was a lesion on the tongue which was treated with radium and responded for a time, later showing no improvement, I should think this is a case where the growth should be destroyed by fulguration. I am sure that Doctor Clark or I would not hesitate to remove the greater portion of the tongue if necessary. However if radium needles are used, such lesions usually respond to radium.

I agree that we should sound a warning against physicians who have purchased radium and are treating their patients without knowing its physics or the physological action. Many who have purchased small quantities of radium are not giving intelligent treatment. While there is always a danger of producing a marked reaction we should never hesitate, provided all precautions were taken, to give a lethal dose. Many are giving inert radium treatments the same as they were giving inert x-ray treatments a number of years ago.

The imbedding of radium needles is certainly a step in advance in the treatment of nearly all mouth and throat lesions. I have buried radium in carcinoma of the breast with good results. Of course much larger doses or more radium needles must be used and the adjacent glands must be treated. In conclusion radium is one of the best forms of treating mouth and throat lesions, but cases usually come too late to receive the full benefit of the treatment.

A METHOD OF DISTINGUISHING FROM AMONG VARIOUS MICROÖRGANISMS PRESENT IN A PATIENT, THOSE THAT ARE AND THOSE THAT ARE NOT ACTED UPON BY THAT PATIENT'S WHOLE, COAGULABLE BLOOD*†

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A NEW TEST FOR IMMUNITY

While searching, in association with Solomon Solis-Cohen,[1] for a simple test that would show which individuals are immune and which are susceptible to pneumococcic infection, we discovered a property possessed by animals immune to pneumonia which was absent in susceptible animals, namely, the power possessed by their whole, fresh, coagulable blood of destroying the pneumococcus. Pneumococci are destroyed by the fresh coagulable blood of the immune pigeon and chicken, but grow luxuriantly in the whole blood of the highly susceptible mouse and rabbit. This property does not reside in the serum, for defibrinated chicken blood is just as good a culture medium for pneumococci as defibrinated rabbit's blood.

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†From the Jules E. Mastbaum Research Laboratory of the Jewish Hospital of Philadelphia.

A similar bactericidal power we found in an animal immune to acute anterior poliomyelitis[1] which was absent in a susceptible animal, the globoid bodies growing vigorously in fresh coagulable human blood, but no growth whatever taking place in the blood of the rabbit. The same phenomenon was observed in regard to the meningococcus by Matsunami and Kolmer,[2] who employed our method. Little or no growth of meningococci takes place in the fresh, whole blood of the immune rabbit, while in the whole blood of the susceptible mouse growth is vigorous. In our more recent, yet unpublished, work with the diphtheria bacillus, also in association with Solomon Solis-Cohen,[3] we found a bactericidal power in the whole blood of the immune rat that was absent in that of the susceptible guinea pig. Incidental to our work with coagulable blood we observed[1] that contaminations seldom occurred. We found that *Bacillus subtilis* refused to grow in the coagulable blood in our capillary tubes, even when heavy suspensions were used for seeding. Other nonpathogenic organisms from sputum, aural discharge and venereal lesions quite uniformly failed to grow in coagulable blood. To explain these facts we advanced the tentative hypothesis[1] that when small numbers of bacteria are planted in blood before it has coagulated, only those bacteria grow and multiply which are pathogenic for the species and animal from which the blood is taken.

MEASURING THE EXTENT OF THE IMMUNITY

Another property of this bactericidal activity was brought out by our tests on human blood.[1] Recovery from an attack of lobar pneumonia is paralleled by an increase in the power of the patient's blood to kill the type of pneumococcus causing the infection. Similarly the intravenous injection of dead pneumococci into rabbits produces bactericidal activity in the rabbit's blood which is specific to type.

A similar rise in the bactericidal power of the blood was observed by Black, Fowler and Pierce[4] in rabbits following their intravenous, subcutaneous or intraperitoneal inoculation with dead typhoid bacilli or *Bacillus dysenteriae*.

In a further study made by one of us with Solomon Solis-Cohen,[5] it was shown that increasing the virulence of pneumococci for rabbits increases their ability to grow in rabbit blood *in vitro*, and that the mathematical expression of the ability of a strain of pneumococci to grow in the blood of normal rabbits *in vitro* is an expression of the virulence of the strain for rabbits. Recently in association with Solomon Solis-Cohen[6] we have shown that there is also a correlation between the ability of bacteria to grow in the whole blood of man and their virulence for man.

THE COMMON INFECTIONS

In this present investigation we have extended our inquiry to the ordinary infections that are met with in everyday practice, endeavoring to learn whether, in a given case, the infecting organism could be distinguished from other organisms present, which were merely saprophytic or accidental, by its ability to grow in the patient's whole blood, which power might be lacking in the contaminating organisms. If the occurrence of an infection were associated with low or absent bactericidal power in the patient's blood against the infecting organisms, vaccine therapy could be made more simple and rational; for if the blood lack bactericidal power against only one organism, it would seem proper to inject a vaccine made from that one organism alone. The injection of dead bacteria of the type the patient's blood was already killing might add unnecessary and possibly harmful foreign protein and possibly disturb in some way the proper protective balance.

TECHNIC

We studied our cases according to one of two methods. The more rapid method is to inoculate lightly, without touching the sides, the bottom of a sterile test tube with the substance to be cultured, and to cover it with five cubic centimeters of the patient's freshly drawn blood. The tube is then placed in the incubator and at the end of twenty-four hours a drop of the undiluted blood or a drop diluted with normal salt solution is spread over a blood-agar plate. The organisms that grow up are identified and grown separately, and from them a vaccine is prepared. The other method is to inoculate blood-agar plates directly with the substance to be cultured and, after identifying and separating the organisms that grow up, to plant them in the patient's coagulable blood in the following manner:

Heavy walled glass tubing is drawn out into capillary tubing having an inside diameter of 0.5 to 1 mm. The capillary tubing is cut in 15 cm. lengths and the ends are trimmed square by nicking them with a fine file or with the edge of a carborundum pocket hone and breaking them across. Five of these tubes are held side by side and a pellet of plasticine is moulded closely about them near one end. A short piece of glass tubing stuck into the plasticine so as to enclose the five protruding ends makes a convenient handle. Pressure on the plasticine spreads out the capillary tubes into a fan shape. With a wax pencil a fiduciary mark is made upon each capillary tube about 5 cm. from its free end. The tubes are also numbered one to five by means of dots. Five small sterile test tubes are numbered from 1 to 5 and arranged in a row. In tube 1 is placed a quantity of a twenty-four-hour culture of the organism to be tested, while in the other tubes are placed a series of dilutions with normal sodium chlorid solution in multiples of ten — 1 : 10, 1 : 100, 1 : 1,000, 1 : 10,000.

The many-stemmed pipette is taken up and the tip of tube 1 touched to the surface of the undiluted culture in test tube 1. The fluid runs up the slender tube by capillary attraction. When the upper level of the ascending fluid reaches the fiduciary mark, the tip of the tube is withdrawn from the test tube, the fluid which has run up the tube remaining in situ. The other capillary tubes are filled in the same manner from the test tubes bearing corresponding numbers. The tip of each tube is then touched with a piece of moist gauze, whereupon the column of fluid runs out, owing to the greater adhesion between gauze and the liquid than between the same liquid and glass. If the tube should not completely empty itself, gentle blowing into the other end of the tube will start the downward flow again. It is evident that when the suspension of the organisms flows out, a certain number of them will remain sticking to the wall of the glass tube, the greatest number being left by the heaviest suspension. This procedure is repeated with each culture, using a different many-stemmed pipette for each organism. We thus have a series of many-stemmed pipettes, each consisting of a series of five tubes containing diminishing numbers of one type of organism. We then stick the patient's finger and allow a drop of blood to flow up each tube by capillary attraction. The tubes are then sealed by dipping their ends in candalilla wax (70 parts) and paraffin (30 parts).

The capillary tubes containing the blood and the organisms are dropped into a test tube and incubated for twenty-four hours, at the end of which time they are taken out, the tips broken off, and a drop from each blown out upon a glass slide. The slide is fixed in methyl alcohol for five minutes, dried, stained in carbol-thionin or methylene blue for five minutes, and examined under the microscope. The organism that was originally planted in the tube by now has grown up vigorously or has disappeared. The organisms that disappear when cultured in the patient's blood are disregarded as having no relation to the infection from which the patient is suffering, the patient's blood apparently having sufficient bactericidal power against them. The organisms that grow in the patient's blood, however, are regarded as including the infecting organisms; and from them a vaccine is prepared for the purpose of developing and increasing against them bactericidal power, which is apparently lacking or diminished. In a few cases no organisms grew up in the patient's blood. These were therefore regarded as unsuitable for vaccine treatment.

Thirty-eight patients were studied. Twenty-seven had more than one secretion examined. Five had the same secretion examined more than once.

URINE

Case 1, A. M. J. From the urine of a fourteen-months-old baby with pyelocystitis and from a papule on its buttocks staphylococcus albus and staphylococcus citreus were isolated; but when grown in the baby's blood the former disappeared, while the latter multiplied rapidly.

TABLE 1

Dilutions of 24-Hour Culture

	Undiluted	1 : 10	1 : 100	1 : 1000	1 : 10,000
Staph. Citreus & Case 1	?	—	*	**	**
Staph. Citreus & Control	*	?	—	—	—
Staph. Albus & Case 1	—	—	*		—
Staph. Albus & Control	—	—	—	—	—

(In this and subsequent tables each sign represents the results in one capillary tube which was seeded from the dilution indicated and then filled with blood in the manner described. — indicates that the organism failed to grow; ? indicates doubtful growth; * indicates growth; ** indicates vigorous growth.)

Under treatment with a vaccine made from the latter the symptoms disappeared and the child recovered.

Case 2, R. H. In a second case of pyelocystitis in a child of nine years colon bacillus and bacillus lactis aerogenes were obtained from the urine, both of which grew in the child's blood, the latter in dilutions of one hundred-thousandth, but the former not in a dilution above one hundredth.[6] It may be noted that in our unpublished work, quoted above, in association with Solomon Solis-Cohen, undiluted cultures of bacillus coli failed to grow in the whole blood of fifteen men tested.

(Subsequent note: Under vaccine treatment the urine became sterile.)

TABLE 2

Dilutions of 24-Hour Culture

	1 : 10	1 : 100	1 : 1000	1 : 10,000	1 : 100,000
Bac. coli. & Case 2	*	**	—	—	—
Bac. coli. & Human Control .	**	**	**	**	**
Bac. coli. & Defibr. blood	**	**	**	**	**
Bac. lactis aerogenes & Case 2	**	**	**	**	**
Bac. lactis aerogenes & Human Control	**	*	—	—	—
Bac. lactis & Defibrin. Blood .	**	**	**	**	**

As a control, one set of tubes was loaded with defibrinated blood. When growth takes place in the defibrinated blood and not in the whole blood, it indicates the presence in the whole blood of an anti-bacterial factor which is lacking in the defibrinated blood.

Case 3, A. K. In a young man with pyuria no organisms grew from a tube in which ten cubic centimetres of his fresh whole blood was laid over a few drops of his urine. Staphylococcus albus and pseudo-diphtheria bacillus grew on a blood-agar plate inoculated with his urine.

TABLE 3

Dilutions of 24-Hour Culture

	1:10	1:100	1:1000	1:10,000	1:100,000
Staph. albus & Case 3	*	?	—	—	—
Staph. albus & Control	*	—	—	—	—
Staph. albus & Defibrin. blood	**	**	**	**	**
Pseuododiph. bacillus & Case 3	*	—	—	—	—
Pseuododiph. bacillus & Control	**	—	—	—	—
Pseuododiph. bacillus & Defibr. blood	**	**	**	**	**

Case 4, N. C. The urine of a middle-aged colored woman with cystitis was cultured in a capsule of her whole blood. Staphylococcus albus and a diphtheroid grew up.

FECES

Case 5, L. O. In the feces of a woman of fifty-eight years with chronic osteoarthritis, bacillus coli and bacillus fecalis alkalinis were found. Neither grew up in her blood.

TABLE 4

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Bacillus coli. & Case 5	—	—	—	—	—
Bacillus coli. & Control	—	—	—	—	—
Bacil. fec. alkal. & Case 5	—	—	—	—	—
Bacil. fec. alkal. & Control ...	—	—	—	—	—

No vaccine was prepared, since it was thought there was nothing to be gained by injecting organisms to which the blood was already bactericidal.

Case 6, M. H. A little girl of six years had recurrent attacks of intestinal disturbance associated with erythema multiforma. A large stool containing great quantities of mucus and undigested food, but no parasites, was cultured. Five organisms grew up: staphylococcus citreus, staphylococcus albus, streptococcus viridens, bacillus fecalis alkalinis, and bacillus coli. When incubated in the patient's whole blood, all disappeared but staphylococcus albus and bacillus fecalis alkalinis, from which a vaccine was made with resultant recovery.

TABLE 5

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Staph. citreus & Case 6	—	—	—	—	—
Staph. albus & Case 6	**	**	**	**	—
Strep. viridens & Case 6	—	—	—	—	—
B. fecalis alk. & Case 6	**	**	—	—	—
B. Coli & Case 6	—	—	—	—	—
Mixture of all 5 & Control ...	—	—	—	—	—

Case 7, F. D. A man of thirty years was suffering from arthritis. His feces were planted in a capsule of his whole blood. Streptococcus fecalis and staphylococcus albus grew up. A rhino-pharyngeal swab was similarly cultured but other organisms grew up. (Reported below.)

Case 8, G. R. From the feces of a woman of thirty-nine with chronic arthritis three strains were isolated: streptococcus fecalis, bacillus coli and bacillus fecalis alkalinis. When tested on her blood all practically disappeared, although one was present in the undiluted blood.

TABLE 6

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Strepto. fecalis & Case 8	*	—	—	—	—
Bacillus coli & Case 8	—	—	—	—	—
Bacillus fecalis alk. & Case 8 .	—	—	—	—	—

Apparently the infecting organism was not in the intestines. A tonsillar swab contained other organisms. (Reported below.)

AURAL DISCHARGE

Case 9, A. G. A culture made from the ear of a young woman who had had a discharging ear from childhood, with an exacerbation for the past two years, showed a gram-bacillus and staphylococcus albus, which could not be separated and both of which grew only in her undiluted blood.

TABLE 7

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Gram-bac. & Staph. alb. & Case 9	*‡	—	—	—	—

‡Both Gram-bacillus and Staphylococcus grew.

The administration of a vaccine made from these organisms resulted in a complete cure.

Case 10, F. H. A man seventy years of age developed an otitis media and double epidydimitis at about the same time, with resultant freely discharging ear and scrotal abscess. From the aural discharge two strains were isolated—streptococcus viridans and staphylococcus aureus, the former disappearing when cultured in the patient's whole blood, the latter growing.

TABLE 8

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Strept. viridans & Case 10 ...	—	—	—	—	—
Staph. aureus & Case 10	**	**	**	*	—

Case 11, H. G. The aural discharge of a man of twenty-one years, whose ear had been running since childhood showed staphylococcus albus and a gram-bacillus, the latter disappearing and the former growing luxuriently when cultured in the patient's whole blood.

TABLE 9

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Staphylococcus albus & Case 11	**	**	**	**	**
Gram-bacillus & Case 11	—	—	—	—	—

A culture subsequently made from one of a number of small boils that developed after several injections of a vaccine made of staphylococcus albus showed a pure culture of this organism.

Case 12, R. L. From a culture on blood serum of the aural discharge of a girl of ten years two strains were isolated, streptococcus viridans and a diphtheroid, which were incubated in capsules of the patient's undiluted blood, the former disappearing and the latter growing.

CULTURE FROM GLANDS

Case 13, L. M. A woman of fifty-eight years of age had been suffering for the past four years from chronic enlargement of both parotid glands with dryness of the mouth, known as Mikulicz's disease. In May, 1918, cultures were made from the mouths of Steno's ducts and 0.2 c.c. of sterile water injected into each parotid gland and withdrawn into the syringe and reinjected several times with the needle in position, this liquid then being cultured. All cultures showed a pure growth of staphylococcus albus, from which a vaccine was prepared and administered without benefit.

In October, 1919, cultures were made from the nares, the rhino-pharynx, the mouths of both Steno's ducts, and, by puncture, from the substance of the parotid gland. The culture from the parotid gland puncture was sterile. That from the mouths of Steno's ducts showed a non-hemolytic streptococcus and staphylococcus albus, which latter organism was obtained in pure culture from the nares and rhino-pharynx. Both organisms failed to grow in the patient's blood.

TABLE 10

Dilutions of 24-Hour Culture

	Undiluted	1:10	1:100	1:1000	1:10,000
Streptococcus anhemolytic & Case 13	—	—	—	—	—
Streptococcus anhemolytic. & Control	—	—	—	—	—
Staph. albus & Case 13	—	—	—	—	—
Staph. albus & Control	—	*	—	—	—

An anerobic culture, made by puncturing both parotid glands, planting the fluid obtained in tubes of beef ascitic fluid and placing in our anerobic jar proved sterile. Consequently this patient was not regarded as a proper subject for vaccine treatment.

Case 14, J. G. A young girl of twenty years, with latent pulmonary tuberculosis, had enlarged cervical glands which had not responded to injections of tuberculin in the form of either tuberculin Ruckstand (T. R.) or bacillen emulsion

(B. E.), administered during the winter and spring of 1917, but which had become smaller during the summer and fall of 1917 under appropriate doses of bovine old tuberculin (O. T.), determined by the degree of reaction to different doses injected intracutaneously, according to the method of one of us.[7] In the winter of 1919 the glands along the sternocleidomastoid muscles began to enlarge, associated with frequent acute respiratory infections, especially coryza. The patient was seen in November, 1919, after our return from military service and a culture of the enlarged glands, by puncture, was made. Four strains were isolated: streptococcus viridans, micrococcus tetragenus, diphtheroid and micrococcus flavus. Streptococcus viridans grew in the patient's undiluted blood, but not in the dilutions. The other organisms disappeared when incubated in the patient's whole blood.

TABLE 11

Dilutions of 24-Hour Culture

	Undiluted	1: 10	1: 100	1: 1000	1: 10,000
Strept. viridans & Case 14 ...	*	—	—	—	—
Micrococ. tetragen. & Case 14	—	—	—	—	—
Diphtheroid & Case 14	—	—	—	—	—
Micrococ. flavus & Case 14 ..	—	—	—	—	—
Mixed suspension of all 4 & Control	—	—	—	—	—

No benefit followed administration of a vaccine made with streptococcus viridans.

PAPULE, PUSTULE AND SINUS

Case 1, A. M. J. The baby with pyelo-cystitis had several small papules on the buttocks without pus. A culture from one of them showed the same organisms that were found in the urine—staphylococcus citreus and staphylococcus albus, of which the former grew, while the latter disappeared, when cultured in the baby's whole blood. The papules disappeared during the course of treatment with the vaccine made from staphylococcus citreus.

Case 11, H. G. After several doses of staphylococcus albus administered to a patient with otitis media, many small boils appeared on the face, neck and buttocks. A boil on the buttocks gave a pure culture of staphylococcus albus.

Case 35, S. C. A girl of seven years with asthma had a freely discharging sinus in her neck, said to have been present since birth. Studies of swabs from her rhino-pharynx and sputum are described below under "Upper Respiratory Passages." The pus from the sinus was inoculated on blood-agar and three organisms were isolated: diphtheroid, staphyococcus aureus, staphyloccus albus. None of them grew in her blood.

TABLE 12

Dilutions of 24-Hour Culture

	1: 10	1: 100	1: 1000	1: 10,000	1: 100,000
Diphtheroid & Case 35	?	—	—	—	—
Diphtheroid & human control	*	—	—	—	—
Diphtheroid & defibr. pig's blood	**	**	*	*	*
Staph. aureus & Case 35	—	—	—	—	—
Staph. aureus & human control	—	—	—	—	—
Staph. aureus & defibr. pig's blood	**	**	**	**	**
Staph. albus & Case 35	—	—	—	—	—
Staph. albus & human control	*	—	—	—	—
Staph. albus & defibr. pig's blood	**	**	*	*	*

Ten days later cultures on blood-agar were again made from the pus from the sinus, as well as from the rhino-pharynx and sputum. No organisms grew up from the pus. A smear of the pus was examined at the same time but no organism was found. The cells present were polymorphonuclear. The antiformin method was used in searching for tubercle bacilli but none was seen.

UPPER RESPIRATORY PASSAGES

The nares, rhino-pharynx, pharynx and tonsils, one or all, were cultured in twenty-eight cases.

Case 15, R. D. A little girl, ten years of age, had had an attack of pneumonia in her third year complicated by empyema, for which a rib was resected, followed by a nine month's convalescence. A year ago a vulvar abscess appeared, which was incised and packed. The patient was suffering from a septic endocarditis and cardiac dilation, apparently of over a year's duration and associated with fever and severe nose-bleeds. There was no history of tonsilitis. X-ray examination showed both lungs to be somewhat infiltrated, confirmed by physical examination. The sputum contained pneumococci, streptococci, *Micrococcus catarrhalis*, pus cells and blood, but no tubercle bacilli. Tuberculin intracutaneous test with 0.000,1 mg. O. T. was negative.

Believing that the organism responsible for the heart condition might be present on the rhino-pharynx or in the blood, cultures were made of both. Culture of the blood on broth proved sterile. A swab from the rhino-pharynx cultured on a blood-agar plate showed staphylococcus albus, streptococcus and diphtheroid bacillus. A rhino-pharyngeal swab planted in the patient's whole blood gave a pure culture of hemolytic streptococcus. The patient was given antistreptococcic serum and other appropriate treatment with marked improvement. It was deemed unwise to use a vaccine.

Case 16, L. W. The rhino-pharynx of a girl of four years with septic endocarditis was cultured and three organisms isolated: gram-diplococcus, diphtheroid and micrococcus catarrhalis. When incubated in the patient's whole blood, the first grew up well, the last irregularly, and the other only in undiluted blood.

TABLE 13

Dilutions of 24-Hour Culture

	Undiluted	1: 10	1: 100	1: 1000	1: 10,000
Gram-Diploc. & Case 16	**	**	*	*	*
Gram-Diploc. & Human control	**	*	—	—	—
Gram-Diploc. & Defibrin. pig's blood	**	**	**	**	**
Diphtheroid & Case 16	*	—	—	—	—
Diphtheroid & Human control	*	—	—	—	—
Diphtheroid & Defibrinated pig's blood	**	**	**	**	**
Microc. catarrhalis & Case 16 .	—	o	*	—	*
Microc. catarrhalis & Human control	**	—	?	—	—
Microc. catarrhalis & Defibrin. pig's blood	**	**	**	**	**

Administration of a vaccine made from the gram-diplococcus soon brought the temperature curve to normal.

Case 17, A. W. B. A young man of twenty-two years of age had chronic pharyngitis over a period of two years. Swabs from his nares and rhino-pharynx were cultured in 5 c.c. of his whole blood. Three strains grew up: streptococcus viridans, a gram-bacillus and staphylococcus albus.

Case 18, A. S. A young man of thirty-five years had suffered for three weeks with tonsilitis, pharyngitis and coryza, associated with acute arthritis of the knees, hips and shoulders and some urethral irritation with slight discharge, not containing gonococci. Swabs from both tonsils, the rhino-pharynx and the nares were planted in 10 c.c. of the patient's whole blood in a test tube and the urine was cultured in the patient's whole blood in a Wright's capsule. The culture of the urine proved sterile. A culture from the right tonsil showed: streptococcus viridans ***, streptococcus hemolyticus **, and other organisms *. The throat culture in whole blood showed streptococcus hemolyticus and a diphtheria-like organism.

Case 19, F. C. A young woman twenty-eight years of age, with tonsils probably diseased, had been subject for a number of years to frequent acute infections of the nose and throat. A culture from the rhino-pharynx made upon a blood-agar plate showed: streptococcus hemolyticus *, streptococcus viridans **, micrococcus tetragenus *, microccus catarrhalis * and staphylococcus albus *. Swabs from the crypts of the tonsils, the rhino-pharynx and the nares were planted in 10 c.c. of the patient's whole blood, with growth of: staphylococcus albus *, diphtheroid * and streptococcus hemolyticus ***. A vaccine containing all three of these organisms was administered.

Case 20, J. S. C. A young woman of twenty-six, who was subject to attacks of coryza, was suffering from purulent coryza with an impetigenous condition of the nostrils. A blood-agar plate inoculated with a swab from the rhino-pharynx showed: pneumococcus **, staphylococcus ** and micrococcus catarrhalis **. Swabs from the nares, rhino-pharynx and sputum were planted in the patient's whole blood, in which there grew up: staphylococcus albus *** and streptococcus viridans *. A vaccine made from these two was administered.

Case 21, C. D. A woman of forty-one years suffered for many years with symptoms suggestive of frontal sinus involvement. A first culture on blood-agar of the nares proved sterile. From a second culture of the rhino-pharynx on the same medium three organisms were isolated: a non-hemolytic streptococcus *, pneumococcus ** and staphylococcus *. A few colonies were obtained from a second culture of the nares. On testing these organisms with the patient's whole blood, the streptococcus disappeared, the staphylococcus grew luxuriantly, the pneumococcus not so well.

TABLE 14

Dilutions of 24-Hour Culture

	Undiluted	1: 10	1: 100	1: 1000	1: 10,000
Streptococcus & Case 21	—	—	—	—	—
Straphylococcus & Case 21 ...	**	**	**	**	**
Pneumococcus & Case 21	**	**	—	—	—

Case 22, E. W. A young woman developed an acute coryza and sore throat, with fever. Swabs from the tonsils were covered with 4 c.c. of her whole blood and also inocculated directly in a blood-broth tube. The latter showed: pneumococcus, streptococcus, diphtheroid and gram-bacillus. From the culture in whole blood only staphylococcus albus grew up. A vaccine made from this was administered.

Case 23, G. W. A young woman had developed a severe upper respiratory infection several weeks before, which persisted in chronic form with congestion of the pharynx and much purulent yellowish-green discharge from the throat and rhino-pharynx. A blood-agar plate inocculated with a swab from the rhino-pharynx showed staphylococcus albus ** and streptococcus viridans ***. A rhino-pharyngeal swab planted in 10 c.c. of the patient's whole blood showed only streptococcus viridans. A vaccine made from this was administered.

Case 24, B. F. L. A man of fifty-five years had an acute nasal and bronchial infection of two days' duration. A swab from the rhino-pharynx was planted in 5 c.c. of the patient's whole blood. A pure culture of staphylococcus albus was obtained. The first two doses of a vaccine made from this producing no improvement, the vaccine was fortified with staphylococcus albus grown on blood-agar. Prompt and marked improvement followed two doses of the fortified vaccine.

Four months later the patient developed another respiratory infection. A swab from the rhino-pharynx was planted on a blood-agar plate with the isolation of three strains: staphylococcus albus *, streptococcus viridans * and micrococcus catarrhalis *. A swab was planted in the patient's whole blood. Only streptococcus viridans grew up. A vaccine made from this was administered.

Case 25, R. L. A woman of fifty years had been subject to acute respiratory infections all her life, associated with toxic symptoms, and at times has had pain over both malar bones. During an attack of coryza, sore-throat and cough of five days' duration cultures were made from her nares, rhino-pharynx and sputum. Five organisms were isolated from all three cultures, there being no predominance of any one type: streptococcus viridans, micrococcus siccus, staphylococcus aureus, diphtheroid and gram-bacillus. When tested with the patient's whole blood, staphylococcus aureus grew luxuriently and the diphtheroid grew quite well. The others disappeared.

TABLE 15

Dilutions of 24-Hour Culture

	Undiluted	1: 10	1: 100	1: 1000	1: 10,000
Strept. viridans & Case 25 ...	—	—	—	—	—
Micrococ, siccus & Case 25 ...	—	—	—	—	—
Staphyl. aureus & Case 25 ...	**	**	*	**	**
Diphtheroid & Case 25	**	*	*	—	—
Gram-bacillus & Case 25	—	—	—	—	—
Mixture of all five & Human control	**	**	**	**	**

Case 26, V. D. A young girl of sixteen years had three weeks previously contracted an acute descending respiratory infection which had been epidemic at her boarding school. One week after its onset she began to have attacks of asthma which, with cough and expectoration, still persisted. Cultures from her rhino-pharynx and sputum disclosed: streptococcus hemolyticus, streptococcus viridans, staphylococcus albus and micrococcus catarrhalis. When tested with the patient's whole blood, staphylococcus albus was the only strain that grew up, the others disappearing.

TABLE 16

	Undiluted	1: 10	1: 100	1: 1000	1: 10,000
Strept. hemolyticus & Case 26	—	—	—	—	—
Strept. viridans & Case 26 ...	—	—	—	—	—
Staphyl. albus & Case 26	**	**	**	**	**
Micrococ catarrhalis & Case 26	—	—	—	—	—

Case 27, M. S. C. A man of 42 years had a chronic nasal catarrh and a chronic bronchitis of twenty-four years' duration, which had resisted every form of treatment. From a blood-agar culture of his nares, rhino-pharynx and sputum four strains were isolated: pneumococcus, staphylococcus aureus, staphylococcus albus and diphtheroid. A month later swabs from his nares, rhino-pharynx and sputum were planted in 10 c.c. of his whole blood. A pure culture was obtained of staphylococcus albus, from which a vaccine was made and administered without clinical improvement. Three months later cultures on blood-agar and in the patient's whole blood were made from the rhino-pharynx and sputum.

The blood-agar plate showed: staphylococcus albus ***, micrococcus catarrhalis *, pneumococcus * and streptococcus viridans *.

The culture in whole blood showed staphylococcus albus and streptococcus viridans.

Case 28, B. S. C. A young woman of thirty-one years had been subject to chronic nasal catarrh for ten years, which had resisted local, constitutional and stock-vaccine treatment. Swabs from her nares, rhino-pharynx and tonsils were planted in her whole blood, from which were isolated pneumococcus and diphtheroid bacillus.

Case 29, J. E. S. A young man of thirty-two years with pulmonary tuberculosis, which was fairly quiescent after a recent exacerbation, was subject to frequent attacks of acute descending respiratory infection. Swabs from his nares, rhino-pharynx and sputum were planted in 10 c.c. of his whole blood, from which a pure culture of streptococcus viridans was obtained.

Case 30, S. S. A little boy of six years in a tuberculosis sanatorium showed no physical or skiographic signs of pulmonary tuberculosis and responded negatively to intracutaneous tests of 0.1 mg. of tuberculin Ruckstand (T. R.) and and 0.1 mg. of old tuberculin (O. T.).* Swabs from his throat and rhino-pharynx were cultured on blood-agar and in 5 c.c. of his whole blood. From the plate were isolated: staphylococcus, pneumococcus and micrococcus catarrhalis. The blood culture showed staphylococcus aureus and staphylococcus albus.

Case 31, T. R. D. A boy of eight years, with pulmonary tuberculosis in the second stage, did not expectorate. Swabs from his throat and rhino-pharynx were cultured on blood-agar and in his whole blood. From the culture on blood-agar were isolated staphylococcus and micrococcus catarrhalis. From the culture in whole blood there grew up staphylococcus and pneumococcus.

Case 32, K. G. A little girl of eleven years in a tuberculosis sanatorium showed no evidence of pulmonary involvement on physical examination, although the skiagraph showed infiltration of both hila with fibrosis of the upper lobe of each lung, more marked on the left. She reacted to intracutaneous tests of 0.001 mg. of old tuberculin (O. T.) and 0.01 mg. of tuberculin Ruckstand (T. R.). The child did not expectorate. Swabs of her rhino-pharynx and throat were planted on blood-agar and in her whole blood. From the former were obtained: pneumococcus, staphylococcus, pseudo-diphtheria bacillus and micrococcus catarrhalis; from the latter staphylococcus and micrococcus catarrhalis.

Case 33, M. D. A boy of seven years with pulmonary tuberculosis in the third stage reacted to intracutaneous tests of 0.001 mg. of old tuberculin (O. T.) and 0.01 mg. of tuberculin Ruckstand (T. R.) but did not expectorate. Cultures on blood-agar and in his whole blood were made from his rhino-pharynx and throat. From the blood-agar culture were isolated staphylococcus, pneumococcus and micrococcus catarrhalis. In the patient's whole blood grew staphylococcus, pneumococcus and streptococcus anhemolyticus.

Case 34, J. B. A boy of thirteen years, with far advanced active pulmonary tuberculosis, did not expectorate or react to intracutaneous tests of 0.1 mg. of old tuberculin (O. T.) or of tuberculin Ruckstand (T. R.). Blood-agar and his whole blood were inocculated with swabs from his throat and rhino-pharynx. From the blood-agar plate were obtained staphylococcus, micrococcus catarrhalis and bacillus hoffmani.

In the whole blood were found: staphylococcus and a bacillus resembling influenzae. Injections of a vaccine made from these two were followed by noticeable improvement.

Case 35, S. C. A girl of seven years had been subject to cough and asthmatic attacks for the past two years and a half, following an attack of pertussis. She had a discharging sinus in the neck, said to have been present since birth. Physical and skiographic examination revealed pulmonary infiltration. X-ray examination also suggested an old tuberculosis of the third and fourth dorsal vertebrae. A blood-agar plate was inoculated with swabs from the rhino-pharynx and sputum, from which were isolated pneumococcus and gram-diplococcus. When tested with the patient's whole blood the former grew slightly, the latter scarcely at all.

TABLE 17

Dilutions of 24-Hour Culture

	1: 10	1: 100	1: 1000	1: 10,000	1: 100,000
Pneumococcus & Case 35	*	?	—	—	—
Pneumococcus & Human Control	*	—	—	—	—
Pneumococcus & Defibr. pig's blood	**	**	*	**	*
Gram-Diplococcus & Case 35 .	*	—	—	—	—
Gram-Diplococcus & Human Control	*	—	—	—	—
Gram-Diplococcus & Defibr. pig's blood	**	**	**	*	—

Ten days later a swab from the rhino-pharynx was again inoculated on blood-agar and there grew up: staphylococcus albus, staphylococcus aureus, pseudo-diphtheria bacillus, pneumococcus. The first three organisms had been isolated from the pus from the sinus ten days before.

Case 4, N. C. A rhino-pharyngeal swab from a woman with convalescent influenza was cultured on blood-agar and in 10 c.c. of her whole blood. Five different strains were isolated from the blood-agar plate: streptococcus viridans **, pneumococcus **, staphylococcus aureus *, staphylococcus albus * and micrococcus catarrhalis *. From the culture in whole blood only staphylococcus albus was obtained. It will be recalled that this same organism was present in the urine.

Case 7, F. D. A swab from the rhino-pharynx of a man of thirty years, suffering from arthritis, was cultured in the patient's whole blood. Pneumococcus, staphylococcus aureus and staphylococcus albus grew up. From these and from two organisms obtained from his feces (reported above) a vaccine was prepared and administered.

Case 8, G. R. A woman of 39 years with sacro-iliac osteoarthritis of thirteen years' duration following a fall, with a dislocated cartilage in her knee joint, had had boils in her ear, and ten years ago had an attack of tonsilitis, followed by pneumonia, which in turn was followed by acute otitis media. Tonsilectomy had been advised. A swab from the tonsils was planted on blood-agar and in the patient's whole blood. On the blood-agar plate the following organisms grew up: streptococcus hemolyticus *, micrococcus catarrhalis ***, staphylococcus * and streptococcus viridans *. The only organism that grew in the patient's whole blood was streptococcus viridans.

Case 13, L. M. As already mentioned, cultures from the rhino-pharynx and nares in the whole blood of a patient with Mikulicz's disease gave a pure growth of staphylococcus albus, which failed to grow in the patient's whole blood.

Case 36, I. S. C. Swabs from the nares and rhino-pharynx of a young man of twenty-two years with chronic bronchitis of five years duration were planted in his whole blood without any organisms growing up.

Case 37, A. D. H. Below, under "Sputum," is described a case of chronic bronchitis in a man of thirty-six years, swabs from whose nares, tonsils and rhino-pharynx were planted (with his sputum) in his whole blood on several occasions.

Case 38, S. R. The pharynx was cultured in a case of pulmonary tuberculosis, described below under "Sputum."

SPUTUM

Case 36, I. S. C. The sputum of the young man of twenty-two years with chronic bronchitis, already referred to, was likewise planted in his whole blood, which remained sterile.

Case 37, A. D. H. A man of thirty-six years had had a chronic bronchitis of eight years' duration, associated with frequent hemoptysis, some apical dulness and an area in the left lower lobe posteriorly where at any time during this period what were either crepitant rales or friction sounds could be heard. Tubercle bacilli had been frequently examined for but had never been found in his sputum during this period, although many physicians, including the most expert, had diagnosed pulmonary tuberculosis. His sputum was injected intraperitoneally in a guinea-pig with negative results. Three organisms were isolated from a culture of his sputum on blood-agar: non-hemolytic streptococcus *, streptococcus viridans ** and staphylococcus albus *. When these were tested on his whole blood the non-hemolytic streptococcus disappeared, streptococcus viridans grew luxuriently and staphylococcus albus grew well in the lowest dilution only.

TABLE 18

Dilutions of 24-Hour Culture

	Undiluted	1 : 10	1 : 100	1 : 1000	1 : 10,000
Strept. anhemolyt. & Case 37 .	—	—	—	—	—
Staphyl. albus & Case 37	**	**	—	—	—
Streptococ. viridans & Case 37	*	**	**	**	**

The administration of a vaccine made from the two organisms that grew up had practically no benefical effect. About ten weeks after the first examination, swabs from his nares, rhino-pharynx, tonsils and sputum were planted in 10 c.c. of his whole blood. Three organisms grew up: streptococcus hemolyticus **, diphtheroid * and bacillus influenzae ***. A vaccine made with these organisms was administered without clinical improvement. A little less than three months after the second culture, swabs from the rhino-pharynx and sputum were again planted in the patient's whole blood with growth of only staphylococcus albus. A similar culture made ten days later gave the same result. A culture on blood-agar made at the same time showed staphylococcus albus, micrococcus catarrhalis and streptococcus viridans. A vaccine of staphylococcus albus was administered with some clinical improvement.

Three months and a half after the fourth culture a blood-agar plate and 5 c.c. of the patient's whole blood were inoculated with swabs from his nares, throat and sputum. On the blood-agar plate there grew up pseudodiphtheria, staphylococcus albus and pneumococcus. In the blood culture were found staphylococcus albus and gram-bacillus resembling influenzae. Marked local, focal and systemic reactions followed the injection of even small doses of a vaccine made from these two organisms.

Cases 20, 25, 26, 27, 28, 29 and 35. Swabs from the sputum were inoculated at the same time on the same media as the swabs from the nares, rhino-pharynx and tonsils in all these cases.

Case 38, S. R. Swabs from the sputum and pharynx of a man of twenty-five with active, progressive pulmonary tuberculosis in the far advanced stage were inoculated on a blood-agar plate and in 5 c.c. of his whole blood. Four organisms were isolated from the blood-agar plate: staphylococcus albus, pseudo-diphtheria bacillus, pneumococcus and streptococcus. Two organisms grew in the blood culture: pseudo-diphtheria bacillus and a gram-positive, short, thick bacillus, whose colonies were small and translucent on serum.

DISCUSSION

(George D. Heist died before this paper was written and had no opportunity to review this discussion and conclusion.—M. S.-C.)

This study was undertaken to determine whether individuals differ in the bactericidal power of their blood toward those organisms that are generally regarded as being responsible for the various infections the physician meets with that have no one definite etiology; and whether the whole blood of an infected individual lacks bactericidal power against the infecting organism. It was thought also that treatment with autogenous vaccines might be made more accurate and specific, and thus more effective and less productive of harm, if the vaccine contained only those organisms for which the patient's blood lacked bactericidal power and omitted all those other organisms present in a discharge or on an infected area which the patient's blood apparently already had the power of killing or inhibiting. Our previous experience having demonstrated that contaminating and non-pathogenic organisms usually disappear when grown in the whole blood of the person or animal studied, we desired to learn if, for practical purposes, organisms that disappear when cultured in a patient's whole blood might not be regarded as contaminations and hence excluded from an autogenous vaccine, which would thus become simpler and less dangerous.

The cases are too few and the periods over which they have been studied are too short to permit the expression of any opinion in regard to the therapeutic results of a vaccine made up in the manner indicated, even though the results in a few cases might be regarded as being at least suggestive.

IMPORTANT FACTS DEMONSTRATED

The cases are reported rather as demonstrating several important facts: i. e., that the fresh, whole, coagulable blood of human beings possesses bactericidal or inhibitory power against large numbers of organisms; that the blood of an individual differs in its bactericidal or inhibitory power toward different organisms; that bactericidal or inhibitory power against a particular organism varies in different individuals; that in the discharge from an infected area organisms can usually be found against which the blood of the infected person has little or no bactericidal or inhibitory power; and that frequently in such discharge or on such area other organisms are found against which the person's blood has good bactericidal or inhibitory power. Therefore when a bacteriologist states that a certain organism grows well or poorly or not at all in blood: he first should make it clear whether he refers to whole fresh, coagulable blood or to defibrinated or citrated blood or to blood serum; secondly he should state in the blood of what species it has been found to grow or fail to grow; and thirdly, he should specify whether growth occurred or failed to occur in the blood of all or only of some of the individuals tested. Our studies show that in the whole blood of some individuals organisms that are supposed to grow well in human blood fail to grow at all, while other organisms that are generally regarded as growing very poorly or not at all in human blood grow with the greatest luxuriance in the whole blood of some individuals.

AUTOGENOUS VACCINE NOT NECESSARILY SPECIFIC

No pretense is made that the study is in any way complete. We have made no attempt to establish any definite etiological relationship between the organisms present in the discharge or infected area that grow in a patient's blood and the infection from which the patient is suffering. Although treatment with autogenous vaccine is supposedly on a scientific foundation, it is a mere assumption that the etiologic organism is always present in a culture made from the discharge or infectious area. Our work would indeed seem to indicate that it is frequently lacking. But there is no certainty that the etiologic organisms are those or even among those that grow in the patient's whole blood. The controls show that some healthy individuals may lack bactericidal power against certain organisms. And while, from the fact that bactericidal power against the etiologic organism is lacking in animals susceptible to pneumonia, poliomyelitis, meninigitis and diphtheria, we may reason that low or absent bactericidal power against any organism indicates susceptibility to invasion by such organism; yet the analogy is by no means perfect, for the etiologic character of the pneumococcus, globoid bodies, meningococcus and diphtheria bacillus has been thoroughly established, which is far from being the case in the infections presented in this paper. In fact, in the two cases of pyelocystitis reported, staphylococcus was found in one and colon bacillus in the other. Likewise in the different cases of otitis media, respiratory affections, etc., different organisms were found. On the other hand, the finding only of staphylococcus in the case of pyelo-cystitis just referred to, and its presence both in the urine and in a papule, and the finding in a boil in one of the patients with otitis media of a pure culture of the same organism that was found in the aural discharge and which grew in his blood, suggests a probable etiologic relationship between the organism and the infection. Our work, however, does not show whether in these cases the bactericidal power became low after infection or had been low, thus permitting infection. In view of the probability, however, of absent bactericidal power against an organism indicating lowered resistance to that organism, it would seem reasonable to attempt to increase this resistance even if the organism concerned might not be the cause of the infection, since it might prove a factor in a subsequent or complicating mixed infection.

Even if the etiologic organism will grow in a patient's blood, there is no certainty that one swab from the discharge or infected area will always contain it. Especially in the respiratory infections, therefore, it is quite possible that in many instances we have missed the etiologic organism. Nor have we eliminated the possibility that some etiologic organisms do not always grow in the patient's whole blood.

NATURE OF THIS NEWLY DISCOVERED PROPERTY

Until we have made further investigations into the nature of this property that is present in the whole, coagulable blood of immune animals, and absent from the blood of susceptible animals, we shall not declare that it is strictly bactericidal, although we believe that it is. We have kept the cultures for long periods of time without having other organisms grow up.

Bull and Bartual in their published article[9] found no proof of a bactericidal action on pneumococci but found an inhibition of growth by the blood of the immune animal. In a subsequent personal communication, however, Bull states that he found the action to be bactericidal. Matsunami also states in a later article[10] that he has found evidence that the action of the immune blood on meningococci is truly bactericidal. Black, Fowler and Pierce[4] speak of the organisms as being destroyed. Undoubtedly the quantitive relation of bacteria to blood is a factor. If the number of bacteria is excessive or the amount of blood too small we may expect a subsequent growth. On the other hand, if the number of bacteria is exceedingly small and the amount of blood used very large the organism may fail to grow up in the presence of a very small amount of bactericidal power.

We have presented no evidence that in the cases studied the bactericidal power of the blood has been raised by the administration of the vaccine. It is our intention, however, to undertake several lines of work that may throw some light on these many questions that our present study has left unanswered.

CONCLUSIONS

Despite the incomplete character of the work here reported, a number of conclusions can be drawn:

1. The whole, fresh coagulable blood of human beings possesses the property of destroying or inhibiting the growth of various pathogenic and non-pathogenic organisms; but this power against a particular organism is not always present at all times in every individual and, when present, may vary in degree.

2. The absence in the whole blood of an individual of this bactericidal or inhibiting property against an organism is presumptive evidence of the susceptibility of that individual to infection by this organism.

3. The presence or absence of bactericidal power against a particular organism in the whole, coagulable blood of any animal or human being can easily be determined *in vitro* by incubating the organism in the whole, coagulable blood of the individual for twenty-four hours; at the end of which time the organism will have disappeared or will be growing vigorously.

4. When an organism present in a papule, pustule, abscess, urine, or aural discharge grows in the whole blood of the infected individual there is a strong presumption that it is the etiologic organism or a complicating organism, or is likely to become the latter.

5. When an organism present in the respiratory passages, sputum or feces grows in the whole blood of an infected individual, there is a probability that it may be the etiologic or a complicating organism.

6. When an organism present in an infected discharge, secretion or excretion, or on an infected area, disappears when planted in the whole blood of the infected individual, it may be fairly presumed to have no part in the infection. Its inclusion therefore in an autogenous vaccine may be regarded as unnecessary and possibly harmful.

We desire to make acknowledgment of the valuable services of Louis S. Borow in making some of the bacteriological studies and assisting in others.

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SELECTIONS

THE THYROID GLAND AND EXOPHTHALMIC GOITER*

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The thyroid gland may be demonstrated in the anterior portion of the neck in all vertebrate animals. Embryologically it originates from an invagination of the pharyngeal epithelium, between the three divisions of the primitive tongue from which place it descends to its final resting place at the sides of the trachea. Its blood supply is extremely rich coming from the four thyroid arteries directly from the carotids and subclavians, being six times greater than that of the kidney and, in proportion to its weight, receiving eight times as much blood as the head. It receives its nerve supply from the superior, middle and inferior sympathetic ganglia and from the superior laryngeal branch of the vagus.

The gland possesses two lobes connected by an isthmus across the trachea and is surrounded by a fibrous capsule from which delicate prolongations enter its substance dividing it into innumerable alveoli lined with a single layer of cylindrical cells. Having no duct it is assumed that the secretion of this organ passes directly into the blood stream to mingle with the secretions of the other glands of the endocrine system. The chief product of the thyroid is colloid which distends each alveolus and is usually found in quantity in inverse proportion to the activity of the organ. Its varying degree of accumulation evidences marked fluctuations in the functional activity of the gland as manifested by gross increase in size, in adolescence, during menstruation, pregnancy, lactation and the menopause.

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*Read before the Lycoming County Medical Society at Williamsport, March 11, 1921.

The thyroid is an essential organ, its experimental excision producing myxedema and death and its congenital absence resulting in cretinism. If the gland is experimentally removed from a young animal there will be an arrest in the growth of the osseous system and myxedematous infiltration of the skin with markedly retarded metabolism. The bones and cartilages fail to develop, the skin becomes rough and infiltrated with mucoid substances and in many respects the animal retains the characteristics it possessed in fetal life. Fundamentally the thyroid is a regulator of metabolism, and its stimulating effects on growth may be demonstrated by feeding fresh thyroids to tadpoles which results in metamorphosis into frogs in from eight to ten days whereas normal development usually requires from three to six months.

Situated in the posterior capsule of the thyroid are the four parathyroids, small reddish brown organs hardly larger than a pea and so obscured as to require a most painstaking dissection for their demonstration. The parathyroids, like the thyroid, are essential to life, yet their functions are distinctly separate and distinct. While complete removal of the thyroid in experimental animals produces nutritional disturbances and reduction of general metabolism, parathyroidectomy precipitates acute nervous manifestations with tetany and violent convulsions followed by speedy dissolution.

In all probability there are several principles in the secretion of the thyroid each with its own hormone, for the function of the thyroid is, unquestionably, multiple and extremely complex. It is felt that the thyroid operates in conjunction with the other endocrine glands as a part of that great chain of which it is but an important link and functions reciprocally and in harmony with the pituitary, the thymus, the adrenals, the spleen and the parathyroids each to a certain extent dependent upon the others.

In 1895 Baumann discovered an element in the thyroid which he termed iodothyrin and which he considered the active principle of the gland. He was followed in 1897 by Hutchinson who discovered in the colloid certain substances containing both iodine and phosphorus. Oswald later isolated a substance also containing iodine to which he applied the term iodothyroglobulin. Many observers have since found iodine to be a normal constituent, the content varying with the species of the animal and to a marked extent according to season. Although iodine may be found in the thyroid it can also be detected in other organs such as the suprarenals, hypophysis, liver, muscles, and lymph nodes, yet it occurs in larger quantities in the thyroid than in the others.

In 1914 Kendall, a chemist of the Mayo Clinic, isolated, by first hydrolizing fresh thyroid glands in a 5% solution of sodium hydroxide, a substance he considers the active principle of the gland and in the fall of 1917, after reducing over three tons of hog thyroid, succeeded in collecting 33 grams of this material. He has since constructed its formula and has synthesized the product. To this substance, which contains 65% of pure iodine, he has applied the term "thyroxin." While total excision of the thyroid in animals results in marked diminution in nitrogenous excretion, reduction of metabolism and the deposition of mucoid substances beneath the skin (artificial myxedema), administration of Kendall's thyroxin will correct this as it will bring about an amelioration of symptoms in chronic myxedema in the human. Plummer working with Kendall holds that the thyroid hormone determines the rate at which individual bodily cells produce energy and has shown that one-third of one milogram of thyroxin increases the basal metabolic rate 1%. Patients with complete atrophy of the thyroid have basal rates approximately 40% below normal and it has been shown that the administration of thyroxin alone can bring back and maintain the normal rate. Hyperactivity of the gland, or hyperthyroidism, as occurs in exophthalmic goiter, produces a condition directly the reverse of the state seen in myxedema. Here basal metabolism is plus rather than minus and ranges from 20% to 75% above normal.

Some have believed that the presence of iodine in the thyroid has no more significance than that of copper discovered in the liver and so there have been many exceptions taken to the iodine theory but in 1899 Roos definitely established by animal experimentation, the direct relationship between the iodine content of the gland and its influence on metabolism. That iodine is an essential and important constituent in the thyroid hormone would be suggested by Halstead's classical experiment of performing a hemithyroidectomy and preventing hypertrophy in the remaining lobe by feeding iodine. Marine and Williams found that dogs fed with desicated sheep thyroids lost weight in definite proportion to the quantity of iodine in the thyroid fed. It is probable that among its other functions the gland exerts an antitoxic action and secretes substances which in some way neutralize the toxic products of bodily metabolism. Ried Hunt and Atherton Seidell found that a powerful immunity could be established in animals fed on thyroid against certain toxic chemicals and that after such an immunity was established mice could be given 250 times the usual lethal dose without producing an effect. Sheep breeders have long known that cretin lambs can be prevented by feeding the mother sheep with salt containing iodine and recently Marine has conducted numerous experiments on the school children of Akron in which adolescent goiter has been prevented by the administration of small doses of iodid of soda over long periods of time. Marine contends that such treatment given regularly as a measure of prophylaxis, in a section where the disease is prevalent, may in a generation cause goiter to become extinct.

GOITER

We have come to term every enlargement of the thyroid "goiter." Classifications of the disease are legion, none thoroughly satisfactory and possibly never can be until the etiology of the condition becomes definitely established. For our purpose we may roughly place all goiters under three heads: the physiological colloid enlargement of adolescence; the adenomatous goiter (toxic and nontoxic) and the exophthalmic form of hyperthyroidism. With these we must consider malignancy which constitutes about 3% of all goiters.

When most of the men here first studied this interesting subject they were taught to classify all goiters as either "simple" or "exophthalmic"; simple in that the lesion was entirely local and mechanical with no accompanying systemic manifestations; "exophthalmic" because the goiter was associated with a definite train of systemic signs and symptoms of which exophthalmos was the most startling.

Thyroiditis is of considerable rarity although this condition is mentioned by all authors. It was pointed out by Kocher years ago as being of bacteriologic origin. Although Kocher stated he had never seen primary thyroiditis in a previously normal gland, those coming under his observation being a strumitis rather than a thyroiditis, yet histiological study would suggest that all goiters are inflammatory.

EXOPHTHALMIC GOITER

In 1825 Parry of England and later Graves of Dublin and still later in 1840 von Basadoe of Germany presented papers on the subject of the disease to which we now refer as exophthalmic goiter. The term is incomplete. Hyperthyroidism would be better, providing we accept hyperactivity of the gland as the chief etiologic factor. However, as protrusion of the eyes is so startling a sign and ultimately appears in all advanced cases, the term exophthalmic goiter has come into general use and will suffice until there has been further elucidation of the etiology of the disease. A world of hypotheses, interesting and ingenious as they are varied and complex, have been brought forth to explain the cause. There is the theory of intestinal toxemia so strenuously advocated by McCarrison and Lane. There is the neurogenic theory, the theory that the disease is due to pressure upon the cervical sympathetics; or that it has its origin in the thymus or adrenals or parathyroids.

Moebius in 1886 first called our attention to the possibilities of exophthalmic goiter being produced by hyperactivity of the thyroid gland and by him the disease was considered as the direct antithesis of myxedema. Kendall and Plummer's researches would lead us to accept this, for in experimental animals all the cardinal features of exophthalmic goiter may be produced by subcutaneous or intravenous injections of thyroxin. As the disease may be produced artificially by the administration of the active principle of the thyroid while reduction of the activities of the gland by ligation of its vessels, or by partial excision in an established case of exophthalmic goiter, causes an immediate and marked amelioration of the symptoms, we are justified in holding that the condition is due to hyperactivity of the thyroid. In the light of modern thought it is felt the essential symptoms are not entirely produced by over action of the thyroid itself but that there are disturbances common to all the glands of internal secretion. In any event, whatever or wherever may be the primary excitant, the results are apparently due to the appearance in the blood stream of an abnormal supply of the secretions of the thyroid. The primary cause is to-day unknown and although as many theories have been advanced and strenuously upheld, as has been the case with cancer, we are seemingly no closer to the truth than we are with that terrible scourge.

There can be but little question that profound emotional disturbances, worry, anxiety, excitement and prolonged physical and mental strain are predisposing causes, but in all probability effect a reaction only in those who are already "thyropathic." The symptoms of the disease are characteristic and well defined. Tachycardia, fine fibulary intention tremor of the outstretched fingers, the presence of goiter, exophthalmos, marked bodily wasting, sweating and emotional disturbances are well known as cardinal in the picture. It is the circulatory system which suffers chiefly and the heart ultimately determines the prognosis of the disease. Cardiac collapse is usually the direct cause of death in Grave's disease, although Crile has recently brought forward the theory that the liver is the chief organ to suffer. The marked tachycardia is probably caused by stimulation of the accelerator nerves of the heart through the sympathetic. The blood pressure is at first somewhat higher than normal because of the vigorous cardiac action but with the gradual weakening of the heart, the pressure becomes lowered and as the process continues to cardiac insufficiency the systolic pressure may fall below 100.

There are abortive forms of exophthalmic goiter in which the diagnosis may be difficult, conditions of mild hyperthyroidism in which but few of the cardinal features are present, perhaps nothing being manifested other than slight incapacity, hypersensitiveness or increased nervousness with slight acceleration of the pulse. Many undergo spontaneous cure and are completely overlooked. The usual patient with exophthalmic goiter, however, presents symptoms frankly and with decided promptness, these developing rapidly and rendering the diagnosis a matter of comparative ease. Numerous diagnostic tests have been devised of late and have acquired considerable prominence, especially the adrenalin test of Goetch. Sandiford of the metabolism laboratory of the Mayo Clinic states that the Goetch test does not indicate the degree or even the presence or absence of hyperthyroidism—the contention of several other observers. Within the past five years we have had a far more valuable and accurate means of study placed in our hands and have come to rely to very great extent on the determination of the patient's basal metabolism, which in hyperthyroidism is always increased. The basal metabolic rate usually indicates the intensity of thyroid intoxication and parallels the exacerbations and remissions of the disease very closely. Experience teaches that neurasthenics with symptoms suggesting mild exophalmic goiter, with tachycardia as a prominent feature, will show normal basal rates. Such a picture is not dependent on disturbances in the thyroid. There are many instances of so-called "irritable heart" coming to the attention of the clinical observer and attributed to exophthalmic goiter, but complete rest leads to a lowered pulse rate and a normal metabolic rate will rule out hyperthyroidism.

In the majority of cases of exopthalmic goiter, the thyroid gland is enlarged but not markedly so and rarely to the extent seen in the adenomatous type. It may never increase in size perceptibly even with marked evidences of hyperthyroidism—a diagnostic pit-fall if thyroid enlargement is depended on in making the diagnosis.

TREATMENT OF EXOPHTHALMIC GOITER

We have come to rely to a great extent on ligations. In our present series of cases this operation is being performed in over 50% of the cases. At the Geisinger Memorial the basal metabolic rate of every new patient with goiter is first determined. The condition of the circulatory apparatus is studied closely, although the operability of the patient is not determined from any one factor but from many things considered together. There is no single criterion on which we can depend in the determination of the type of operation or the time of its performance. The pulse rate, the degree of muscular weakness, the loss of weight and the metabolic rate are all considered but the intensity of that indescribable picture, known so well to those seeing much of this disease and the details of which make up the syndrome of hyperthyroidism, is our chief reliance. One depends on his clinical experience more than on any physical sign or laboratory test in determining what the operation shall be and when to proceed with it.

Our present procedure is to ligate first the right side followed by ligation of the left superior in one week. The patient is then permitted to return home for eight weeks meanwhile carefully following a certain plan of treatment. She then returns and a right sided lobectomy is performed. She again returns home for eight weeks. The patient later returns for the removal of the left side. We have become more and more conservative but feel sure the results will be better and, although the time consumed in the treatment will be somewhat prolonged, yet our results so far indicate that we can predict almost with mechanical certainty in every case a definite and marked improvement and, following the completion of the thyroidectomy, an ultimate cure. With this method the mortality should be reduced to less than 1½%. All operations are performed under nitrous oxide and oxygen aided by infiltration of ½% novocain. Crile's anociation is carried out to the fullest degree. The only drug relied upon is digitalis and is given to patients with marked tachycardia during the stage preparatory to the preliminary ligation, although our chief reliance is placed on complete rest in bed with isolation in a private room. We know of no drugs or combination of drugs which have definite effects in reducing the hyperactivity of the gland.

No branch of surgery is more highly specialized than that dealing with goiter. Especially with exophthalmic goiter surgical procedures will always be attended by a certain factor of danger not present in other operations which are technically similar. Surely in no serious surgical condition does the patient have to be more thoroughly studied, the type of operation more carefully selected or the time of its performance more accurately planned.

All these things must be appreciated to obtain the best results. Goiter surgery should be performed in an institution where the personnel is constantly in touch with this type of patient, where the organization is complete and the team work perfect. In such an institution the operation is performed by the hospital rather than by the surgeon. With such advantages nothing in surgery is more brilliant and satisfactory and as applied to this disease the favorable results are more definite, more immediate and more lasting than from any other form of treatment.

PRENATAL AND OBSTETRIC CARE*

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This subject of recent years has become quite important and is mighty interesting for, as in all branches of medicine, if you will look intensively for something in the patient before you, you will generally be rewarded for your endeavors. We sometimes say that the practice of medicine and its various specialties is quite monotonous, and we travel the easy way towards a diagnosis and do not give the patient all our attention; consequently we fail in the proper care, for it is perhaps "just in the usual run of cases, and nothing unusual or interesting." Obstetrics, it seems, has been the last field to claim special attention. By this I mean, we as physicians used to, and many still do, handle maternity patients with practically no regard as to the outcome. We go on the assumption that everything is normal and that labor will proceed normally and without a thought of accident to mother or baby.

We are living in a progressive age and both physicians and the laity have their eyes opened, so to speak, for the end results of lack of attention to the expectant mother have been apparent in the last 15 to 20 years, and a change has to be made for the better. Pregnancy used to be considered a perfectly normal process, requiring no more than casual attention, and likewise was labor considered till it was forced upon us that complications frequently arose during pregnancy, at time of delivery, and in puerperium, and that the majority of these complications could have been foreseen or averted. Hence my topic—"Prenatal and Obstetric Care."

Prenatal care is a term of recent manufacture, embracing in its meaning all the observation and care that an expectant mother should receive, both for her welfare and for the safety of her unborn child. It is a new term for an old state of affairs, but up to comparatively recent times, we as physicians neglected some phases of this work, and trusted to "babbling, gossiping women of experience" to direct the mother in the right way. It is time that physicians step in and direct the paths these women are to follow, have them under their own supervision, and assume proper control of these patients. This presentation can dwell only on the high points, due to brevity of time, but I shall try to review for you and bring to your attention again, details which should by all means be carried out in all maternity patients, and I'm sure you will agree with me at least on the points.

With your permission, allow me to quote some figures and a few statistics showing clearly why pregnancy can not be considered a harmless physiological process: Based upon the total figures from the birth registration area of the United States for the year 1918, Howard finds that for every 10,000 births and stillbirths, there occur 88.48 maternal deaths due to causes incident to pregnancy and childbirth. In England and Wales, the maternal death rate is only 40.31 per 10,000. The deaths were ascribed to the following causes: puerperal fever 27.79%, accidents of pregnancy 24.28%, albuminuria and convulsions 19.97%, accidents of labor 18.08%, and puerperal hemorrhage, 6.85%.[1] The statistics from the Registrar General's report for England and Wales in regard to puerperal mortality in 1919 are quite astounding. Deaths assigned to pregnancy and childbirth in 1919 were 3,028; which is about 4.37 per 1,000 births, with rate of infection as 1.76 per 1,000 births.[2] Ritter estimates the number of uterine gestations in the United States at 2,560,000 per annum, with 15,000 maternal deaths. Together with 150,000 stillbirths and 115,000 neonatal deaths, these 15,000 maternal deaths complete a known waste of life amounting to 280,000 in the performance of what should be a physiologic function.[3]

Let us compare childbirth death rate figures with those of other preventable diseases. The only available figures I have for comparison are for 1913. In this year and in the same area, the death rate from disease of pregnancy and childbirth in the registration area was 15.8 per 100,000, and the death rate from puerperal septicæmia was 7.2; the typhoid rate was 17.9 per 100,000, for diphtheria and croup 18.8; the highest death rate from any one disease was that of tuberculosis, 147.6 per 100,000 population. Let me, for another moment, give you figures when the basis of death rate is considered only in women of the childbearing age. In 1913 (again the only available census) in the registration area, the diseases of pregnancy and childbirth caused more deaths than any other cause except tuberculosis. (See accompanying chart 1.)

NUMBER OF DEATHS OF WOMEN 15-44 YEARS OF AGE IN DEATH REGISTRATION AREA, 1913

Cause of Death	*Number of Deaths*
T. B. (various forms)	26,265
Diseases of pregnancy and childbirth	9,876
Heart disease	6,386
Nephritis	5,741
Cancer	5,065
Pneumonia	4,167[4]

There have been marked advances in medicine and surgery and many improvements in diagnostic methods; there have been marvelous strides made in surgical technique; all these have tended to reduce the mortality of typhoid fever, of diphtheria, of pneumonia, appendicitis, etc. Contrast with this the fact that maternal mortality is increasing each year, for records show that there has been an increase in childbirth mortality from 1902 to 1919. In New York City, one woman in every 250 deliveries dies from infection or as an indirect result of it. Maternal mortality from puerperal infection remains the same to-day as 20 years ago and, at the present writing, tuberculosis alone leads in causes of death of women in the childbearing age, with childbirth mortality running second, and from 40 to 50% of these deaths are due to infection. Then consider again that one baby out of every 21 is born dead and that one out of every 26 dies before it is a month old. Records from the registration area of the United States show that from 1902 to 1919 there have been approximately three times as many deaths from sepsis, four times as many deaths from eclampsia, and twice as many from other obstetrical causes as there were 17 years ago.[5]

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*Read before Blair County Medical Society, Altoona, Pa., June 28, 1921.

Therefore, may I not ask, is labor in woman of today a normal function? Can a function so perilous, in spite of the best care, that it kills thousands of women each year, that leaves at least a quarter of the women more or less invalided, that is always attended by severe pain and tearing tissues and that kills 3 to 5% of children—can such a function be called normal?[6] The function of reproduction is a closed cycle of events; it is demanded of us that this cycle should not cause the woman's death nor injure her health, and that the child be born alive and capable of continuing life.

If I have been able to show you that childbearing can no longer be considered a physiologic process, but rather as Polak said in 1910, "parturition is rapidly becoming a pathologic phenomenon," then I will be very grateful for your forbearance in listening to my paper. As DeLee states, "not the majority, but the minority of labor cases are normal, and not until the pathologic dignity of obstetrics is fully recognized may we hope for any considerable reduction of the mortality and morbidity of childbirth."

Permit me to give to you a comparatively meagre outlined prenatal routine which it has been my practice to follow out both in my private work and in the prenatal clinic of the Altoona Hospital, which has been functioning now for the past 10 months.

It is my aim to obtain my cases (private and clinic) as early in pregnancy as is possible. I have found that within the past 4-5 years there has been a rapidly growing tendency among the laity to report to their physician when they recognize that pregnancy is an assured fact; the people are becoming educated to this early reporting and are really demanding of their physicians that they "look after" them throughout their pregnancy period. A careful history should be obtained as to their previous diseases, with particular reference to the diseases which we recognize as causing possible after effects, such as rheumatism, scarlet fever, etc. It is prudent to inquire into their previous pregnancy, labors and puerperii, and to bring out whether this patient had convulsion, a difficult labor or possibly an infection. A history of miscarriage is of paramount importance. A physical examination of all maternity patients should by all means be carried out, with particular emphasis regarding the lungs and heart. It is my routine to go over a patient's history when I am engaged, noting all matters of particular interest regarding the previous medical history, the menstrual history, any pregnancies, labors, and puerperii. A preliminary examination of lungs and heart is made at this first visit. The blood pressure is taken and recorded. The patient is then advised as to the importance of visiting me every 3 weeks, bringing a specimen of urine, and to have the blood pressure read, and for reporting any unusual symptoms. It is my practice to give a small booklet to my maternity patients, which contains a few instructions which I think they should obtain from their physician, rather than from the gossiping, babbling neighbor folks. This booklet also saves a lot of time in explaining this and that which they should know. The headings of this pamphlet are about as follows, with just sufficient reading matter that will explain the purport of each heading: Office Visits, Urine, Blood Pressure, Pelvic Measurements, Physical Examination, Exercise, Fresh Air, Amusements, Diet, Bowels, Breasts, Dress, and Bathing. I have further added a heading Dates to mark down to inform me of, when to call me, what to have ready, and Danger Signs. I have found that my patients are coming regularly to me on their third week visits and but very, very few have offered any objection to this frequency.

It is not my intention in this presentation to go over before you physicians the whys and wherefores of doing urinalyses, etc., etc., or of instructing the expectant mother in her dress, her habits, her life during the pregnant state, but I'm sure it is far better for our patient to obtain all this information from her physician than from "a friend" who will tell her just what she should not. You all have attended cases of eclampsia who call you in after convulsions have appeared, and who have never had any urinalyses made or any blood pressure readings taken. You have always said to yourself at these times, "If she had only reported to me earlier, maybe I could have averted this catastrophe." By frequent urinalyses and by just as frequent blood pressure readings (which are equally as important) you may be able to foretell the foreboding storm and avert an eclamptic disaster.

Late in the seventh month or sometimes in the eighth month, the patient should be thoroughly examined again. While at this time the greatest attention is given to the pelvis, the heart and lungs should be studied also, the size and consistency of the breasts and the configuration of the nipples. Far from objecting, the patient will approve of such care and thoroughness in the study of her case, and this will increase her confidence in you. The abdominal examination will give you information on the size, shape and consistency of uterus, position of fetus, fetal heart tones (location and quality). Then the external pelvic measurements are taken and recorded. The importance of mensuration cannot be overestimated. It is not necessary by all means to take all the measurements that can be obtained, but simply the important ones, and if these are found below normal, then one should complete the list of measurements. As a rule there are 5 external measurements to take, viz: the interspinous, the intercristal, bitrochanteric, external conjugate, and circumference of pelvis. The external measurements naturally are only relative findings. Only marked deviations from the normal indicate a pelvic contraction. The important internal measurements are the diagonal conjugate, and bispinous; we deduce the conjugate vera from the diagonal conjugate. No case should be permitted to go to labor without some knowledge of the relation between the size of the pelvis and that of the fetus.

So much for care during pregnancy. Now, if you will bear with me a short while longer, it will be my pleasure to go over a few points in the care during labor.

After being cognizant of the formidableness of childbirth from the statistics, it is perfectly logical reasoning to assume that, without thoroughness and care, any case may be another one to add to that list of deaths which even up till 1919 (last available records) has kept this grand nation of ours number 14 in a compiled list of 16 registered nations as regards childbirth mortality, which position we have held since 1900, Switzerland and Spain alone having higher death rates than we. Following the advice of the leading obstetricians in this country, who are alive to the fact that something is wrong somewhere in our obstetrics, if we will consider a delivery the same as a major surgical procedure, then I feel certain our future mortality rate from childbirth will be lowered.

Continuing this idea that delivery is a major surgical operation, then we are compelled to use as much care and thoroughness in preparing our patients for delivery as the surgeon does when he invades the peritoneal cavity. None of you have ever seen a surgeon do any plastic perineal work without first preparing his field of operation, first, by shaving, and later by one or more of the various standard antiseptics, and in a thoroughly aseptic way. Therefore, why is it not equally as important to shave and prepare the pubes and perineum for delivery? This procedure is quite difficult to carry out in home obstetrics, due to the great prevalence of the so-called practical nurses, of whom only a very few are of any value when needed for the not-the-usual case. But I think it has become quite the usual preparatory technic in all hospitals and maternities. Again, very few are the men who do not recognize the absolute necessity of rubber gloves. They should by all means be in every obstetrical bag and should be used in every delivery. A man who does not use rubber gloves is inviting a calamity some time, either upon his patients or himself. They are comparatively cheap even though their life is relatively short, and they are readily sterilized. Once worn they will never be relegated to obliquity as deadening the sense of touch, or from any of the other erroneous ideas covering their usage.

It has been my practice for the past year to make routine rectal in place of vaginal examinations, and it has proved so satisfactory that I doubt if I shall return to vaginal examination, except in those cases where the question of position of fetus is not definitely settled, and for confirmation of position preparatory to forcept extraction. This method is easily learned and the questions it answers are as quickly and satisfactorily settled as by the vaginal route, and in addition your conscience is not bothered with the fear of wondering whether "I could have carried some infection into the vaginal tract." Frequent vaginal examinations as so often seen carried out are far from necessary and tend to meddlesome midwifery, when we are supposed to be superior to midwives and to be practicing the best the leaders can inform us of. Stay out of the vagina and you will be the winner in the end, for little is the "help" that you can give the parturient in the first or second stages of labor. Watchful expectancy is the sign at the crossroads and should be followed to the letter. One of the best ways of noting the progress of labor is by watching the descent of the fetal heart tones from their original position, towards the midline and downwards towards the symphysis pubis. During labor, the fetal heart tones should be constantly under surveillance and this is very easily accomplished by means of DeLee's obstetrical stethoscope.

There are very many various other phases of this work that I should more than delight in speaking of, such as when to use forceps, when to give pituitrin, and the question of episiotomy, morphine-scopolamin, prophylactic forceps, postnatal examination, etc., but my time is short and these are not exactly within the scope of this paper.

I shall ask no forgiveness for casting myself into this paper, as I may seem to have done, for I am particularly interested in this specialty and derive as much pleasure and benefit from studying and working with my cases as the diagnostician does in properly diagnosing, as the roentgenologist does in correctly interpreting his plates, as the general surgeon does in his good recoveries and as the general practitioner does in his daily rounds. Obstetrics is a masterful art full of enormous possibilities for one willing and able to withstand the hardships.

Someone has written that 30% of pregnancies show some abnormality, that 4% show definite symptoms of toxemia, and that 8% show some degree of pelvic contraction, so you see that practically 50% of all expectant mothers have the capabilities of upsetting easy obstetrical traveling unless we, as their physicians, are always on the lookout for trouble and unless we can devote some time to these cases, all of which are worthy of our best and fullest efforts. Prenatal and obstetric care is the right of every prospective mother.

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REPORT OF A CASE OF EXFOLIATIVE DERMATITIS

ILLUSTRATED

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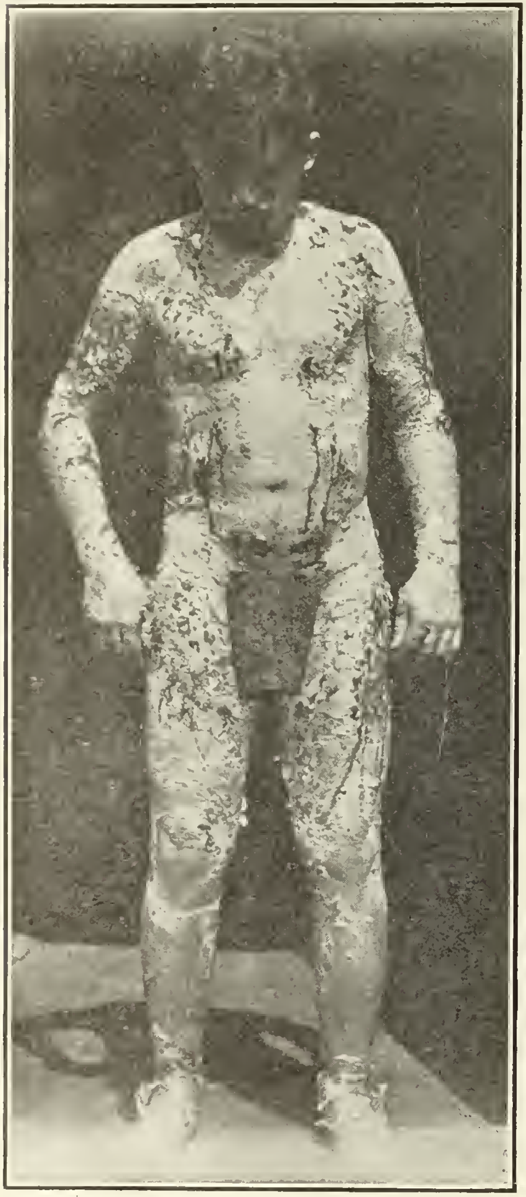
On October 21, 1920, Benjamin Aughinbaugh was admitted to the isolation ward in my service, at the Adams County Alms House, giving the following history:

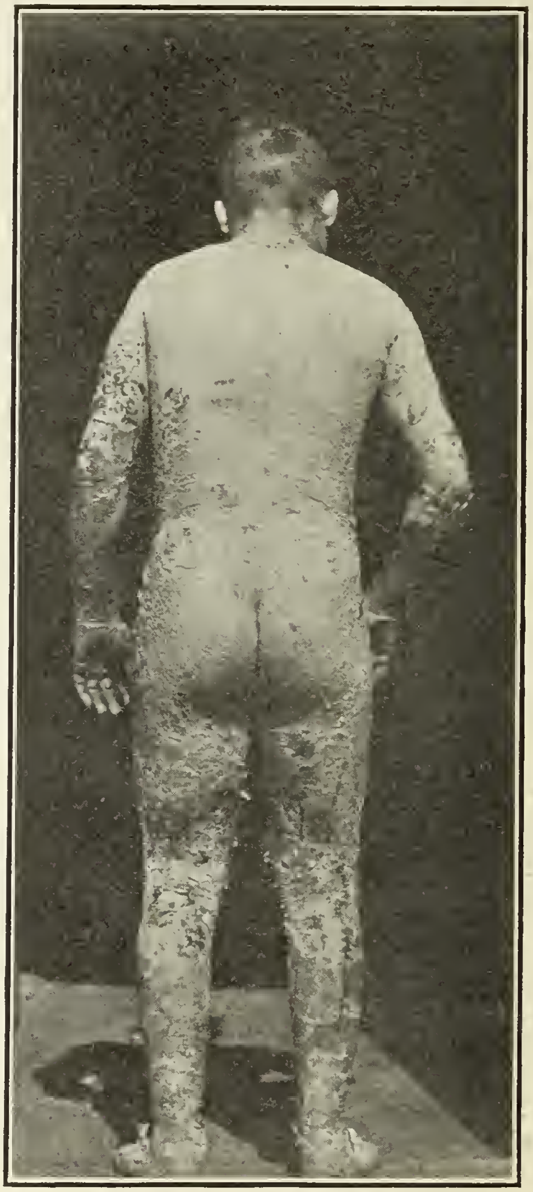
About April 25th he had a "pimple" on left cheek, which, when scratched open, "got sore" with a yellow crust. About April 28th, while working in a furniture factory, he scratched his left arm just above the elbow on some hardened glue. A few days later a red rash appeared all over the body, commencing at the site of the scratch, followed in a few days by yellow blisters on arms, face and chest. These soon burst and became sore. Exfoliation began about May 6th.

This condition is clearly shown by photographs. There were no nodules or blebs—just raw, bleeding surfaces where denuded of epithelium. There was no pain nor itching, only a few slight infections, and no temperature.

On the bearded surface of the face the appearance suggested tinea sycosis, but crusts showed no fungi, either microscopically or by culture, and surfaces freshly denuded proved sterile. The only part of the body not involved was the scalp. The working diagnosis was "dermatitis exfoliata."

The treatment prescribed consisted of hot baths, first sponge, then tub, with weak bichloride to take care of the small infections. There were liberal inunctions of vaseline with a little iodoform for the previous reason.

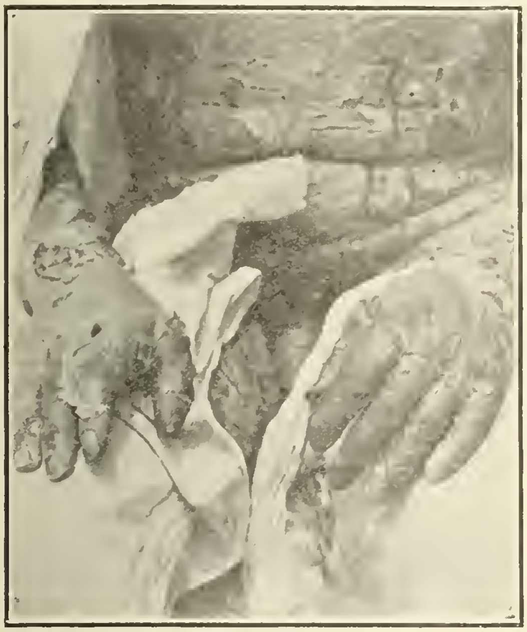




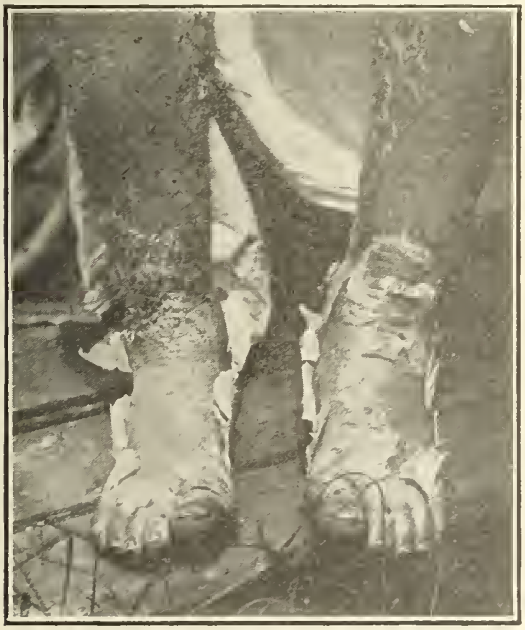
On May 19th the improvement in the patient's condition was almost unbelievable, the final diagnosis being "dermatitis exfoliata, plus neglect and reckless use of strongly irritant applications."

But on May 20th the patient complained bitterly of pain in the right shoulder, and the pain continued during the following day. There was very scanty and heavily albuminous urine on May 22d. We transferred him to the A. M. Warner Hospital on that day. The temperature was 100 degrees, and there were 11½ ounces of urine voided during the first 24 hours, with 25 grams of albumen per litre. Casts were abundant, largely hyaline, and granular. Pus showed in large quantity with abundant calcium oxalate. The diagnosis was pyelo-nephritis.

This condition was treated with hot packs, Murphy drip of 2% soda, sodium citrate and acetate by mouth, caffeine and sodium benzoate hypodermically, and therapeutic lamp to his shoulder and lumbar region.



On June 4th hemoglobin showed 40%; r.b.c. 1,480,000, leucocytes 11,400; small lymphocytes 22.5; large, 6; and polymorhonuclear neutrophiles, 71.5%. The urine output gradually rose to 18, 32, 60 and 70 ounces. Albumin increased to 1 gram per liter on the 26th, 1.25 on the 30th and then gradually diminished, disappearing on June 10th. The neuritis was most persistent, yielding only very gradually to treatment.



This case was discharged on June 12th, with only a trace of albumin and a fair use of his shoulder. The skin condition had entirely cleared up, only a few slight scars showing from the deeper lesions. The follow-up on June 20th showed nothing but a minute trace of albumin and there was a very slight disability in the shoulder. The patient did not report subsequently, as requested.

FAMINE DROPSY OR HUNGER EDEMA

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Definition. Famine dropsy is a form of edema associated with bradycardia, polyuria and asthenia which occurs as the result of prolonged underfeeding. It is unattended by albuminuria, cardiac dilatation, or neuritis. It affects by preference men performing hard physical labor, whose food has a low calorie content (800 to 1,200), these calories being embodied in a largely fluid diet which comprises 15% or more of indigestible cellulose with very little fat and a maximum daily allowance of 50 grams of protein.

Historical. The earliest mention of famine dropsy is found in Greek literature. Hesiod[1] in his "Work and Days" deals with peasant life and toil. He speaks of the starvation a hard winter brings, and advises foresight and thrift, "lest the helplessness of evil winter overtake thee, and with wasted hand thou press thy swollen foot." Paley's note[2] on this passage reads "παχύν πόδα, your swollen foot. A symptom of famine or rather of the weakness resulting from it while the hand becomes emaciated." Scaliger[1] attributed to Aristotle the remark that in famished persons the upper parts of the body are dessicated, the lower tumified. The next definite reference is that made by Giovio, Bishop of Nocera, [quoted by Hecker[3]] in his account of the destruction of the French army besieging Naples in 1528. Pestilence and famine ravaged the camp, fevers and diarrhoeas broke out; "those soldiers who were not already confined to bed in their tents were seen with pallid visages, swelled legs, and bloated bellies scarcely able to walk." Van der Mye[4] gives a description of dropsy appearing during the siege of Breda in 1625. Sydenham[5] refers to the condition when he makes use of the quotation "Ubi desinit scorbutus, ibi incipit hydrops," and calls it a saying of the vulgar which means that when a dropsy has shown itself by clear signs the preconceived notion of a scurvy falls to the ground. In spite of Sydenham's denying a literal meaning to this popular maxim it would be interesting to know how it became current. Lind[6] gives an extract from a letter written by a British naval surgeon in 1762 which shows that an observer who was familiar with scurvy viewed as a novelty a form in which dropsy was the outstanding feature. Kollreuther[7] is quoted as the authority for the observation of famine dropsy during Napoleon's retreat from Moscow in 1812. It is said to have been recorded in the Irish famine of 1835.[8]

A discussion at the Sociètè de Médécine de Gand[9] in 1847 provided the first clear and reliable account of the disease together with its postmortem appearances. M. Lados described the autopsy in a case of death from starvation, saying "serosity infiltrated all the tissues and collected in the various cavities of the body." Mareska joined in the debate. He was chafing against the stupidity of officials who opposed his remedy for famine and its attendant diseases. "It is bread" he insisted "that will cure them....Many," he continued, "have died solely from insufficient nourishment. In these one sees extreme emaciation produced slowly and without obvious functional disorder; but soon the extremities become infiltrated, respiration is embarrassed, and symptoms of dropsy of the chest appear. After death one finds a large serous effusion in the pleura and particularly in the pericardium." Dr. Cornish,[10] an officer of the Indian Medical Service, was the first to draw a distinction between famine dropsy, scurvy, beriberi and the various final edemas of inanition or diarrhea. He described the condition with great precision as occurring amongst prisoners on certain dietaries in the Madras jails. He also reported it in a detachment of native troops on active service in Burma whose rations were inadequate. But above all he drew public attention to it during the Indian famine of 1877-8. He insisted that the dropsy was due to insufficient nitrogenous constituents in the people's food. His ideas did not meet with general acceptance and secured for him marked disapproval from the Indian government. Porter[11] also described the dropsy seen during this famine, and gave the classical account of the diagnostic postmortem sign; "the surface of the heart was devoid of fat...the fat was replaced by edema....There was edema of the mesentery present."

During the siege of Paris (1870-1) Professor d'Espine[12] says that "edema was regarded as the first stage of scurvy; but evidently this was not correct, the number of deaths without scorbutic phenomena justified the view that famine edema was a morbid entity."

In the interval between the Indian famine of 1877-8 and the Great War of 1914 famine dropsy was practically forgotten save by Greig[13] and a small band of fellow workers in India.

The first recorded instance of the disease during the war was at Lille in October, 1914.[14] This unhappy town was in German occupation and the large industrial population was suddenly stripped of everything so that many of the inhabitants had nothing to eat except potatoes. This dietary produced many cases of anasarca unaccompanied by albuminuria. Early in 1915 the disease appeared in German prison camps, and almost simultaneously it was observed among the civil population in famine-stricken Galicia and Poland. Thence forward it was reported frequently from various districts of the central powers as well as from neutral countries.[15]

Incidence Statistics. Accurate statistics as to the relative frequency of famine dropsy in any given community are difficult to obtain. Versmann,[16] who was director of food distribution in Germany confirmed the diagnosis only 200 times in a total of 200,000 applicants. Malloch[17] says that of the first 300 consecutive admissions of released prisoners of war to No. 3 Canadian General Hospital about 20% showed some edema of the feet. Von Jaksch[18] reports that in 1917 in Bohemia, 22,842 persons were discovered suffering from "hunger edema" of whom 1,028 died. In the Indian famine of 1877-8 Porter recorded the admission of 3,250 patients to hospital from a relief camp. "Taken as a whole these patients were greatly emaciated, the majority had edema of the feet and about 10% suffered from general anasarca.

Sex Incidence. All observers agree that in the civil population men are affected out of all proportion to women and children. Jansen[19] gives the relative incidence in certain civil institutions as 12% men, 1.2% women. In the Indian famine Cornish and Porter recorded a great preponderance of men affected. Lichwitz[20] give the sex incidence in a group of 144 cases as 103 men, 39 women and 2 children.

Mortality. Von Jaksch's figures deal with the largest number collected by one observer. He records 1,028 deaths out of 22,842 cases, or 4.5%. Gerhartz described 21 cases with 3 deaths, and Bigland 24 cases with 8 deaths.

Morbid Anatomy. The most striking feature in all autopsies is the total absence of fat throughout the whole body. At the normal sites for fat deposits, in the subcutaneous tissues, in the omentum and mesentery, about the kidneys and on the heart, fat is replaced by edema producing a translucent gelatinous tissue. Hydropericardium, hydrothorax and ascites are frequently seen.

The heart is greatly atrophied, the muscle is pale and flabby, exhibiting histologically brown atrophy. Hypertrophy and dilatation do not occur; the valves remain healthy and competent. The lungs are small, anemic and soft except when bronchopneumonia and pulmonary edema are present. The liver is small and, like the kidneys and spleen, pale and soft. Fat and glycogen are absent from the liver cells. The kidneys show intact, healthy epithelium and tubules. The muscle fibres like the liver cells are devoid of glycogen. Microscopically fat is absent from all organs and muscles.

Signs of concurrent disease are common, especially tuberculosis and inflammatory or ulcerative affections of the large intestine; but the disease is not contagious and groups of cases have been reported without any diarrhea.

Symptomatology. There are four cardinal symptoms, edema, polyuria, bradycardia and asthenia. The onset of the disease is gradual. After a few days malaise, during which the patient complains of little beyond great lassitude, physical weakness, headache and a marked increase in the quantity of urine passed, there appears an anasarca of the limbs and trunk. This begins in the feet, ankles and dependent parts, and often spreads over the whole body even to the hands and face. Ascites, hydrothorax and hydropericardium are frequently seen. The skin assumes a pale yellow tint, muscular wasting becomes extreme and there is usually a characteristic apathy. Xerophthalmia is not uncommon and is probably a definite symptom of the disease.

Polyuria always accompanies the first onset of edema. Extreme bradycardia without irregularity occurs in almost all cases; the rate is usually between 40 and 50. The heart sounds are faint and muffled. Sometimes a soft haemic bruit is heard over all the valvular areas. The pulse is small and feeble and the blood pressure low. The lungs appear normal unless there is some complicating bronchopneumonia or hydrothorax. Dyspnea, cyanosis and signs of failing pulmonary circulation are conspicuously absent. The liver and spleen are not enlarged. Nervous symptoms, such as characterize beriberi are absent, as also are scorbutic manifestations unless there is coexisting scurvy. The same is true of the skin changes of pellagra. The temperature is normal or subnormal. Fever, if present, denotes some complication. Diarrhea is very commonly present, there seems to be some relation between the indigestible residue of the food and the diarrhea, but it is not essential to the production of the disease.

The renal functions seem to be normal. The changes in the urine are probably due to variations in the intake. Suppression of urine is never seen with true famine-dropsy; on the contrary, polyuria is the rule. The polyuria probably depends on polydipsia, with which it goes hand in hand. No albumin, casts or sugar are present. As regards mineral constituents, most observers agree that there is a marked increase in the chlorides, but this may be due to an increased intake: in prison camps men used to add large amounts of common salt to the thin soups to try to give some flavor to them. Calcium phosphates and magnesium show less variation from the normal.

The nitrogen balance is undisturbed. The excretion of urea is low, but improves with the addition of protein to the diet. Ammonia-nitrogen and kreatin are increased as in all forms of starvation with disintegration of the tissue-proteins. Amino-acid-nitrogen and kreatinin sometimes show a slight and variable increase. Urates are as a rule increased in the early stages. Acetone has occasionally been found in the urine.

In the blood hydremia is constantly present, but does not correspond with the degree of edema. The red-cell count may vary within wide limits. Usually there is a moderate degree of oligocythæmia (3 to 5 million). The hemoglobin index is normal. In cases with less than three million erythrocytes cell-changes have been observed: basophilic granules with polychromatophilia, a slight poikiloand anisocytosis and in a few cases normoblasts.

Leucopenia is generally present, the number of leucocytes commonly being between 2,000 and 8,000 per c.mm. Where the count rises above 8,000 some complication may be suspected. There is a relative decrease in neutrophiles and an increase in mononuclears, chiefly the large mononuclears, of which the proportion may reach 55%. These cells frequently attain a very large size, and may contain numerous coarse basophile granules. Eosinophiles and basophiles are often increased.

There is a constant and definite fall in the total proteins of the blood-serum, which shows the same variations in its nitrogen constituents as the urine. The fat-content of the serum remains normal. The lipoid-phosphorus is greatly decreased, whilst the acid-phosphates are increased. The lecithin content of the erythrocytes is diminished and the cholesterin unchanged.

To sum up: there are no changes in the composition of the blood and urine which cannot be explained as the normal outcome of deficiencies and excess in the food-constituents. Certain alterations in the composition of the blood have proved constant, namely hydremia, hypo-albuminosis, and deficiency of lipoids.

Etiology. The main exciting cause is prolonged underfeeding. When the daily food allowance is deficient in calories, in fats and (perhaps above all) in proteins then dropsy occurs. It occurs more rapidly if the victims of such a dietary are men called upon to do hard work and to endure cold; but the Indian famine proved that famine dropsy may appear in hot climates as well as cold. The ingestion of fluid in large quantity is a contributing factor. The German ration for prisoners was very poor in protein and practically fat free. The form in which it was given was almost entirely soup, to which the men used to add a great deal of common salt. Exposure and fatigue hasten the onset of dropsy; whilst previous illnesses such as diarrhea and dysentery so constantly preceded it that at one period of the war it was suspected that the disease might be due to some intestinal infection. In civil population it always affected the poorest of the poor first and in greatest numbers. Men between the ages of 40 and 50 developed the disease most readily. Women and children were less frequently affected and then only in households living in the direst poverty.

Pathogenesis. Recent observations tend to the view that in all forms of edema some local damage to the capillary endothelium exists. So far as famine dropsy is concerned no histological evidence has been obtained of damages to the capillary walls. It may, none the less, exist. This hypothetical damage to the vessel walls may be either a nutritional defect or a toxic lesion. Maase and Zondek are of opinion that in famine dropsy toxic elements play a secondary part. They conjecture that increased protein disintegration gives rise to toxic products comparable to Volhard's Nephroplastine in renal edema. It is more probable that some nutritional defect alters the thickness or permeability of the capillary walls. In this connection the deficiency of lipoids in the blood may play an important part. This lipoid deficiency, the absence of fats from the food, must bear the principal blame, but it does not follow that a mere absence of fat from the food is the sole cause of the edema.

Cornish, in his observations on prison dietaries and Indian famines, persistently attributed the appearance of dropsy to inadequate nitrogenous rather than non-nitrogenous food. Denton and Kohman[21] have stated that dropsy occurs in rats fed on a carrot diet, when the proportion of nitrogen is reduced by the addition of some non-nitrogenous food stuff, such as fat or starch. Kohman[22] found, moreover, that the mere addition of fats, or fat-soluble A, or increase in the salt-content of the diet had no noticeable effect on the occurrence of edema. But there was more marked edema when there was much water in the diet than when the animals were on a dry diet. Maver[23] has confirmed these observations, and concludes that the disease is not a specific "vitamine-deficiency" disease, but is in a broader sense a "food-deficiency" disease, resulting from a protracted existence on a diet poor in total calories, and especially poor in protein.

McCarrison[24] draws attention to the intimate relation existing between the presence of edema and an abnormally high content of epinephrine in the adrenal medulla, when associated with malnutrition of the tissues. Although, as he says, we cannot yet determine the true significance of the association of adrenal derangement and edema.

Diagnosis. The diagnosis of famine dropsy rests upon a syndrome of four cardinal symptoms: edema, polyuria, bradycardia and asthenia. A known insufficiency of diet will also assist in arriving at a diagnosis. It must not be forgotten, however, that food deficiency may arise not only from an inadequate supply of food stuffs but also from an inability to assimilate and make use of the food ingested, so that it remains an open question whether diseases of the alimentary tract such as diarrhea or dysentery may not produce an identical dropsy. Moreover in the present state of our knowledge it is impossible to say whether the so-called "inanition dropsies" seen in such diseases as phthisis and cancer are examples of the same condition. The diagnosis is only justifiable in the absence of certain symptoms which frequently accompany other forms of dropsy: cyanosis, cardiac dilatation and albuminuria. Beriberi, scurvy and pellagra may cause a dropsy which is not famine dropsy, but these diseases may exist concurrently. Hookworm disease presents great difficulty in differential diagnosis, but the presence of profound anemia with considerable eosinophilia will suggest the necessity for careful examination of the feces for occult blood and the hookworm ova.

Prognosis. The prognosis is uncomplicated famine dropsy is good provided the diet can be improved. The prospect of rapid and complete recovery is best in young subjects, in those who are free from any other disease, and in those who come earliest under treatment. Old people, infants and tuberculous subjects are worst. The mortality is greater in men than in women. The death rate in persons over 40 years of age has been estimated at 18%, in children between three and four years old at from 22 to 33%. Uncomplicated cases begin to recover within 48 hours if kept warm in bed with an increased diet; but relapses are common when a patient first gets up and exerts himself. It may be some weeks before a patient can get up without a return of the edema.

Treatment. Rest in bed, warmth and a diet rich in carbohydrates will cure most cases rapidly. The latest researches show however that an adequate protein content is no less essential to the dietary than an adequate supply of calories. The diet at first must be light and easily digested. Small quantities must be given as in any case of starvation. The amount of liquid and of common salt should be limited. Coexisting diseases demand special attention. Relapses of diarrhea often cause great trouble and retard recovery. Cod liver oil has proved a most valuable remedy. The prevention of the disease is solely a matter of diet.

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STATE DEPARTMENT OF HEALTH HARRISBURG, PA.

Because analysis of water and sewage is so closely allied with the duties of the Sanitary Engineering Division, State Department of Health, and in accordance with the governor's wish to have all possible state offices concentrated in Harrisburg, the chemical laboratory located in the Hygiene Building, University of Pennsylvania, has been transferred to temporary building No. 2 of the Capitol group.

The chemical analysis of water is important as it is impossible to determine pollutions and develop means of purification unless the chemical constituents of a water supply are known. The State Department of Health is authorized by law to pass upon all extensions or construction of public water works and sewerage systems throughout the state, and also has authority to order such improvements as may be necessary for the protection of public health. This work is carried on by the Engineering Division of the department and necessitates careful study in the field to determine conditions surrounding any water supply; examination and checking of plans, and laboratory determinations. The general work of the Engineering Division is under C. A. Emerson, Jr., chief engineer, and W. L. Stevenson, assistant chief engineer.

* * *

"Thirty-four children with diseased tonsils and adenoids, and whose parents were unable to pay for operations, were taken to a local physician who gave them the necessary treatment, free of charge," is the report received by the State Department of Health from the school nurse, Miss Mary A. Weir, at Sunbury. Miss Cantwell, the community nurse of Milton, reports 18 school children relieved of adenoids.

There are two Baby Health Centers in Sunbury, directed by Dr. Swenk and the school nurse in visiting the homes is following up the work done in these centers in an effort to secure correction of physical defects in children.

Dr. Ellen C. Potter, director of the Division of Child Health, says: "Just one child relieved of diseased tonsils or adenoids means that our work is worth while. A report of fifty children so relieved encourages every child welfare worker in the state."

* * *

Owing to the limited appropriation received by the State Department of Health for the 1921-1923 period, it has been necessary to curtail expenses. Rather than close tuberculosis dispensaries the department has made a vigorous effort to have local agencies assist in the maintenance of the dispensaries. In 42 towns this has been accomplished.

Col. A. P. Francine, director of the Division of Tuberculosis, State Department of Health, says: "We have received most gratifying coöperation from Chambers of Commerce, Rotary and Kiwanis Clubs, Red Cross, Anti-tuberculosis, and Women's Civic organizations. In some instances the municipal authorities themselves are aiding us in the maintenance of local dispensaries. We encounter little official indifference and in every community there is some organization awake to the importance of public health work and willing to 'carry on.'

"They also recognize that as these dispensaries are run for local community welfare, under local administration, there is a just reason for asking the community to help in this work. The idea of the state maintaining and financing a completely local institution is foreign to American ideals."

Altoona—Moved into Altoona Hospital. Bethlehem—Overhead expenses paid by City Council. Coatesville—By local voluntary organizations. Connellsville—Paid by Culture Club. Easton—Paid by the Anti-Tuberculosis Society. Erie—Paid by local organizations interested in tuberculosis work. Harrisburg—Paid by Welfare Committee. Hazleton—Moved into City Hall. Huntingdon—Paid by Red Cross and Anti-

Tuberculosis Society. Johnstown—Paid by Anti-Tuberculosis Society. Lykens—Paid by Child Welfare Committee. Monongahela—Moved into City Hall. Meadville—Moving to community building of Red Cross and Associated Charities. Meyersdale—Paid by Associated Charities and Anti-Tuberculosis Society. Phipps Institute, Phila.—State clinic closed; clinic to be conducted with privilege of listing cases for State Sanatoria. Renovo—Paid by Red Cross. Sunbury—Paid by local committee through voluntary philanthropic organizations. Scranton—Paid by Anti-Tuberculosis Society. Sharon—Paid by Anti-Tuberculosis Society. Shamokin—Paid by Anti-Tuberculosis Society. Tunkhannock—Paid by county of Wyoming. Uniontown—Paid by Anti-Tuberculosis Society. Warren—Paid by Warren Borough Council. Washington—Paid by local voluntary organizations. Waynesboro—Paid by Public Health Committee. Wilkes-Barre—Paid by Wilkes-Barre City Council and Wyoming Valley and Plymouth Anti-Tuberculosis Societies. Williamsport—Paid by Red Cross. Oil City—Paid by Chamber of Commerce and Red Cross. Pittston—Moved into City Hall.

CLINICS OPENED UNDER NEW PLAN OF LOCAL COMMUNITY PAYING OVERHEAD EXPENSES

Beaver Falls—Located in Providence Hospital. Chambersburg—Paid by local community. East Pittsburgh—Clinic conducted by the Westinghouse Electric & Mfg. Co., with the privilege of listing cases for State Sanatoria. Franklin—Paid by the Red Cross. Lewistown — Tuberculosis Society of Civic Club. Hazleton—Paid by Anti-Tuberculosis Society and city of Hazleton. Mifflintown—Located in the Juniata Bank Building; paid by County Health Council. Newport—Paid by Civic Club and Red Cross of Newport. Nanticoke—Moved into City Building. Punxsutawney—Paid by Red Cross. Rochester—Located in Rochester Hospital. Reading—Paid by the Reading Sanatorium Association. Homestead—Moved into Municipal Building.

* * *

The Supervisor of School Sanitation, State Department of Health, has issued the following ruling on the matter of examining pupils absent from school on account of illness:

"The validity of the excuse of illness (other than communicable disease) for non-attendance of school children is for the school attendance office and the school board to determine. The County Medical Director or State Health Department school inspectors for fourth-class school districts do not pass on this subject unless they are requested to do so by the local board of school directors, in which case they are acting directly for said school board and the charges for such an examination must be paid by the school board."

* * *

To establish a closer coöperation between the Pennsylvania Department of Health and the various boards throughout the state, it is proposed that conventions, composed of the representatives of Boards of Health and the representatives of the State Department of Health, be held at central points in Pennsylvania.

The first convention will be held at Harrisburg on October 25th, in the Senate Caucus Room, which is located off the corridor in the north wing of the capitol on the main floor. The members of boards in Dauphin, Lebanon, Lancaster, York, Adams, Perry, Cumberland, Franklin, Juniata, Mifflin, Snyder, Union, Montour and Columbia Counties have been asked to attend.

The morning session will last from 9 a. m. until 12 o'clock noon, reopening at 1 p. m. and adjourning at 4 p. m. The first hour will be devoted to organization. After which the time will be taken up by practical demonstration of public health methods, state policies and a general discussion of public health problems as applied to the needs of local Boards of Health.

* * *

Dr. Royal H. McCutcheon, Chief Tuberculosis Section, U. S. Veterans' Bureau, Washington, D. C., has been appointed by the State Health Commissioner as medical officer in charge of the War Veterans' Hospital, which will be opened November 5th, on South Mountain.

Dr. McCutcheon is a graduate of Jefferson Medical College, served with the 6th Infantry on the Mexican Border; was with the 110th Infantry, 28th Division, from April, 1917, to July, 1919. The last six months of this service he spent as officer in charge of the hospital camp at La Bour Boule, France. Since his discharge from the army he has been with the U. S. Public Health Service.

Upon his return from a recent inspection trip to the Mont Alto Hospital, Dr. McCutcheon expressed himself as more than pleased to be connected with this unit. He said, "It seemed to me like the 'Land of Promise'—a place in which a man can labor in the service of his less fortunate fellows, and with most fruitful results."

* * *

Paregoric seems to be the national drink. "One barrel of the drug purchased by Mr. Common People to every teaspoonful prescribed by a physician," is the statement of Dr. Thos. S. Blair, Chief of the Bureau of Drug Control, State Department of Health, in his annual report to the Commissioner of Health. He says paregoric has been practically abandoned by physicians, though it is still largely used by the public because of its heavy content of alcohol.

Dr. Blair's report shows 60% less morphine used in 1920 than in 1919; also a reduction of 90% in the use of heroin, and that a smaller amount of opium is being used.

The Commissioner of Health says, "This report indicates that physicians, druggists and dentists are lending their professional support to the campaign against the routine use of habit-forming drugs."

* * *

Dr. Mary Riggs Noble, the recently appointed Director of the Division of Child Health, State Department of Health, is well qualified for the important service of that Division. Dr. Noble, who is a graduate of Colorado College and the Women's College of Philadelphia, gave ten years' service as gynecologist and vice-principal of the nondenominational and international medical college at Ludhiana, India. During the war Dr. Noble was with the National Board of the Y. W. C. A., serving as a social morality lecturer throughout the South and Middle West. For the past year she has been Associate Director of the Division of Child Health, working with Dr. Ellen C. Potter, who resigned to assume the position of Director, Division of Child Welfare, under the Department of Public Welfare.

* * *

With inspectors at the York Fair, last week, the Division of Restaurant Hygiene, State Department of

Health, nears the end of a strenuous campaign to clean up eating and drinking places at fairs.

House Bill No. 937, enacted by the recent legislature, gives this Division ample authority to compel medical examination of all food and drink handlers in the state; the use of hot water and soap for washing dishes and cooking utensils; and a general sanitary condition of places where food or drink is served.

Mr. John M. Delaney, Chief of the Division of Restaurant Hygiene, reports that as many as 1,100 food handlers at one fair were visited by inspectors from his Division, and that at all fairs held during the season there was only one instance where an inspector met with refusal to obey the law. Mr. Delaney says: "The reappearance of the inspector flanked by two state policemen was all that was necessary. The required certificates from physicians were immediately forthcoming, and a general clean-up of eating places was made."

PITTSBURGH ACADEMY OF MEDICINE ABSTRACTS

BASAL METABOLISM

DR. ROY SNOWDON

The study of the rate at which bodily metabolism is proceeding has assured very widespread clinical interest. By metabolism we mean the building up and breaking down of tissue and foodstuffs within the body, this process being essentially one of oxidation and resulting in the liberation of energy, either in the form of heat, motion or new tissue. The laboratory study of metabolism is by no means new; in fact it has occupied a large part of the thought of physiologists for more than a century. It is the widespread clinical use of metabolism studies which is new, and this is due to the recent development of simplified technique and apparatus which has made possible the rapid and fairly accurate study of metabolism.

It is this aspect of the question that is of interest to us. It will be taken up under three heads: (1) The principles of metabolism. (2) Technique for clinical estimation of metabolism. (3) Significance of metabolic rate.

Metabolism is the term applied to the physiological activities of the cells of the body whereby: first, energy is stored by the building up of tissues or storing of food; and, second, energy is liberated by means of the breaking down and utilization of foodstuffs or tissue. This latter is a process of oxidation and the energy is liberated either in the form of heat or of motion. It is this form of metabolism (catabolism) which we are especially interested in. Thus we have protein, carbohydrate and fat being burned up and giving rise to waste products, these being CO_2, H_2O and nitrogenous substances, principally urea. The oxygen is in part absorbed through the lungs and in part derived from the substances burned. The amount of oxygen necessary to supply the demands of combustion varies with different food elements. This variation depends on the amount of oxygen already present in the molecule, that absorbed through the lungs being only what is necessary to complete the chemical reaction.

From the foregoing we know: (1) That the type of metabolism in which we are interested is essentially a breaking down by oxidation of carbohydrate, fat and protein. (2) As a result of this oxidation the carbon forms CO and is eliminated through the lungs. (3) Part of the oxygen necessary for this is contained in the food molecule, the remainder necessary being absorbed from the lungs. (4) The amount necessary to supply this deficiency varies in corbohydrate, protein and fat, but this amount is constant in each case, and is expressed in the respiratory quotient. (5) As a result of oxidation, energy is liberated in the form of heat or motion. In terms of heat we know exactly how much energy is liberated when each type of food is burned. (6) Since we know how much oxygen must be absorbed to burn each type of food, we can, by measuring the oxygen absorbed, estimate the energy being liberated in the body.

The type of metabolism in which we are interested is the liberation of energy in the body by reason of the oxidation of food or tissue. This energy manifests itself in the following ways: (1) motion, (2) digestion of food, (3) maintenance of physiological processes, (4) maintenance of body temperature. The last two proceed at all times and constitute the so-called basal metabolism.

In order to estimate the true basal metabolism it is necessary to eliminate the factors of motion and food. March 22, 1921.

VALUE OF DIRECT EXAMINATION OF EXUDATE FROM THROATS OF DIPHTHERIA SUSPECTS

MOSES H. BAKER

For the past 12 years Dr. Willetts has demonstrated constantly that it is not practical to wait for an 18 to 24-hour culture in order to make a diagnosis of diphtheria. Information gained by clinical history, examination of the patient and smear from a throat swab carefully taken is almost always sufficient to make a decision as to the presence or absence of diphtheria. This idea is not the prevalent one to our knowledge. Textbooks on practice of medicine and on bacteriology and articles on diphtheria in journals give the idea that making cultures is the only safe method of diagnosing diphtheria.

A somewhat different opinion is expressed by Dr. Adrian Bleyer, of St. Louis, in *American Journal Diseases of Children*, November, 1920. He states in the conclusion of his article on this subject that in a small proportion of cases a bacteriological diagnosis of diphtheria can be made by direct smear as well as by culture. He also states that contrary to widespread belief this is available to the clinician not possessed of any unusual skill or training in this sort of work and affords a simple and very exact aid to diagnosis of diphtheria.

Our series of cases is much larger than his and our opinion is different in that we think that the diagnosis can be made not in a small proportion of cases but in a large proportion. In order to confirm our belief we have kept the smears from 110 consecutive specimens on which we have made a written decision before making any cultures. In none of the 110 has the 24-hour culture been of value except to confirm our findings in the direct smear. In order to get good results, it is important to be careful in procuring the specimen. A piece of the membrane should be obtained. If the swab is simply rubbed on the surface of the membrane lightly there may not be any diphtheria bacilli in the specimen as the bacilli are much more numerous in the membrane than on the surface of it. A fairly stiff

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handle to the applicator is required. A small metal curette with a metal handle is very good if obtainable. A piece of membrane obtained in this way or on a cotton applicator with a stiff handle can be crushed on a slide and stained by Gram's method and the characteristic bacilli seen in large numbers.

We do not wish it to be understood that we think diphtheria bacilli can be differentiated from pseudodiphtheria bacilli and other organisms resembling it morphologically without making cultures, but we wish to point out that the 24-hour culture will not give enough information to settle it either. In order to do this, the organisms must be obtained in pure culture and tested as to virulence in animals as well as to its fermentation of the sugars. From a practical standpoint no one waits for all this before deciding to give a patient diphtheria antitoxin. In our opinion just as much can be learned in the vast majority of cases from the direct smear as from the 24-hour culture and nothing is gained by the delay.

April 26, 1921.

ENDOCRINE DISTURBANCE IN MENTAL DEFECTIVES

DR. J. M. MURDOCK
Polk, Pa.

In institutions for mental defectives we find a large number of individuals with pronounced evidence of disorders of the endocrine organs or glands of internal secretion, especially disorders of the thyroid as evidenced by cretinism, and of the pituitary as evidenced by acromegaly and hypopituitarism.

In a study of a large number of cases with reference to disorders of internal secretion by Dr. H. A. Haynes of the Michigan Institution for Feeble Minded, Dr. Haynes found that at least one-fifth of the 1,200 cases examined gave evidence of disorders of internal secretion, a majority of the cases being due to either hypothyroidism or hypopituitarism.

We have in our institutions for the feeble minded large numbers of individuals in whom not only the mental, but also the physical development is arrested, the mental and physical characteristics of the child persisting in the adult. In this condition of infantilism, the arrested development is especially marked in the following factors: The genitalia and the vitasexualis remain undeveloped, or developed deficiently, and the same is true of the secondary sexual characteristics; growth is deficient; ossification is delayed and the childish dimensions of the body are retained wholly or in part. The form of the pelvis is neither of the masculine nor the feminine type, but infantile, and the mental age is three or more years behind the actual age, as evidenced by the Binet-Simon and other mental tests. Such individuals show no gross defect in intelligence, but their minds remain childish. The tendency is to consider these cases as due to disturbance of the ductless glands. Insufficiency of either the thyroid or pituitary or the sexual glands may be responsible for many of these cases, the infantile characteristics remaining through the lack of normal stimulus to bring about the development of adult characteristics.

The correlations existing between feeble-mindedness and glandular defects are not clear, but offer an interesting field for investigation. There is evidence that Mongolian imbecility is associated with, or due to hypopituitarism and that this condition may be due to a deficiency of secretion of the pars nervosa of the pituitary. The demonstration of glandular syndromes in the feeble-minded does not necessarily point to the glandular dysfunction as the cause of mental defect, as both may be due to some underlying cause.

A few years ago experiments on the pineal gland, together with observations of diseased conditions of this gland, gave rise to the hope that pineal gland extract might be of benefit in cases of arrested mental and physical development. Abnormal growth of the skeleton with sexual precocity and early development of secondary sexual characteristics were observed in young boys with pineal tumors, and Dana and Berkely reported that the administration of pineal extract both by feeding and subcutaneous injections in young animals was followed by precocious sexual development, particularly but not exclusively in males.

As a basis for this study, Dr. Raeder of the Massachusetts State Psychiatric Institute, reports 100 cases of feeble-mindedness that came to necropsy, after having been studied clinically at the Massachusetts School for the Feeble-minded. The necropsies were complete, including head, cord and soma in all cases, according to the very thorough system outlined by the later Dr. Southard. Of the 100 cases there were 10 in which 3 or 4 glands were involved, and in which there were marked anomalies of growth. This group included two cretins. Eleven additional cases, 21 in all, showed marked endocrine anomalies in which at least two glands were involved, correlated with distinct changes in growth and anomylous development. In 53 additional cases, 74 in all, changes of one of more glands were demonstrable with irregular and unusual combinations. Gland changes were not demonstrable in 26 cases.

Among the anomalies of development in this series of cases, the development of stature was: undersized 51, oversized 9, normal (5 C.M.) 38, not recorded 2. The incidence of change in the individual glands was: thyroid 19, pituitary 40, suprarenal 27, sex 38, thymus 12, others 6. In polyadenosis the pituitary was one of the glands involved in 39 cases.

CONCLUSIONS

(1) The evidence of gland changes of one sort or another, mostly underdevelopment in 74%, and of marked change in 21%, is sufficient to give the subject serious consideration.

(2) With the constant and characteristic tissue changes, lowered resistance to infection, poor circulation and changes in the glands of internal secretion, Mongolian idocy may be found to be due to an endocrine disturbance.

(3) The internal secretions begin to exert their influence early in the life of the organism. In the young child the thymus, and possibly the pineal, should be most active. Adjustment and activities of the other glands should follow in natural order—the gonads, the thyroid, the pituitary and suprarenals.

Without the normal development of this endocrine system such changes as infantilism, Mongolianism, dwarfism, acromegaly, Cretinism, with mental deficiency, may be the result. It is important that these conditions be recognized early and an effort made to correct the conditions by supplying the deficient hormone, or inhibiting the hyperfunction. After definite somatic changes have taken place, improvement is difficult. With early treatment, results are often marvelous.

March 22, 1921.

POLYPI

Dr. William P. Barndollar

The cause of this very common nasal condition is not yet certain. It is certain, however, that the name nasal myxomata, previously considered a synonym is incorrect as they are in no sense myxomata, but are connective membrane. Polypi have been found in patients of all ages, but are most frequent between the ages of twenty and thirty-five. They are exceedingly rare in the aged, though not so uncommon in the young. This fact should be borne in mind in examining cases of nasal obstruction at the age when adenoid tissue is most common. Within the last year I have seen three children below the age of ten (the youngest being seven) where obstruction had been ascribed to adenoids when it was due almost entirely to polypi.

Histology. Mucous polypi are connective tissue growths. Under the microscope they are shown as made up of a delicate reticulum of fibres, closely resembling embryonic connective tissue, the interspaces filled with serous fluid. The outer surface, epithelium, either columnar or celiated, though through pressure this covering is frequently deficient in areas. They contain but few blood vessels within their mass, but contain many well defined ones in their covering. Nerve fibres have been demonstrated in the polyp envelope, though it is generally considered that such tissue is rare. The fibrous connective tissue stroma is often greatly increased either throughout the growth or in portions of it so that their characteristic appearance is entirely lost and they become quite hard with very much the appearance of an oyster.

Etiology. At the present time they are considered to be edematous hypertrophies always associated with inflammatory conditions in the nose, especially the bone cells of the ethmoid. The condition beginning as a rarefying osteitis with a detachment of the overlying mucous membrane, this passive congestion gives rise to irritation and pressure and a consequent proliferation of the cells of the attached and adjacent area. A serous infiltration is the constant accompaniment, gravity undoubtedly playing a prominent part in this process of infiltration. Greenwald states conclusively, from a large number of nasal polypi cases found at post-mortem, that their presence is pathognomonic of accessory sinus empyema or of focal suppuration within them and that the theory of their formation by respiratory suction and gravity alone is entirely erroneous. General systemic conditions seem to have no influence on the development of nasal polypi nor do we find the patient suffering from their presence except in a purely local way; such as the obstruction which they cause to breathing or the blocking up of drainage from suppurating areas.

As has been said, these growths may be single and of very large size. The writer has within the year removed a polypus the size of a small lime from the naso-pharynx of a man aged twenty which showed marked bulging of the left side of the soft palate and had by pressure destroyed the posterior tip of the lower turbinate and an appreciable part of the bony septum. A thin cord-like pedicle about one and one-half inches long apparently running under the middle turbinate came away attached to the polypus.

Symptoms. This condition is naturally a very slowly developing one, the patient usually adjusting himself to the slow encroachment on the air canals, until it is well marked. Frequently the earliest symptom is anosmia due to the blocking of the olfactory area from the inspired air currents. Deafness is more or less marked, due to the interference with ventilation of the middle ear through the eustachian orifice. Sneezing is very common. Blocking off of the tear duct is frequently seen where the polypi are markedly small and numerous. Pharyngitis due to both mouth breathing and to the mucous-purulent discharge from the naso-pharynx. Pressure and fullness in any or all of the accessory sinus regions. There are various reflex symptoms, the most common of which is asthma; this the writer finds very frequently in well marked cases.

Diagnosis. St. Clair Thomas says, "It is seldom that the diagnosis of nasal polypi presents much difficulty, yet the mistakes made are probably more frequent than in any other of the ordinary affections of the nose and are only equalled by the frequency with which polypi are overlooked." While the writer cannot second this statement, his object in this paper is to bring freshly to mind the frequency with which this condition is met at the present time and to urge an examination of the nasal fossæ in all patients who present any of the foregoing symptoms, especially those who complain of frequent colds in the head and their unaccountably long period of recovering from the same and again in all cases of asthma.

Sufficient has already been said as to the appearance, location, and movability of polypi to allow of their recognition and it only remains to recall conditions which may simulate them—the commonest being hypertrophies of the turbinates. Here we find the hypertrophied tissue not markedly moveable, attached by a broad base which gradually fuses into tissue which is recognizably normal. The turbinal is sensitive, the polypi devoid of sensation. To those used to rhinoscopic appearances the question of differentiation from malignant growths of this same area is about the only one which requires serious consideration. In general, malignant growths have irregular, rough surfaces, which are likely to be ulcerated, sloughing and discolored, much firmer to the touch and very slightly, if at all, moveable. The probe will draw blood from malignant growths with very little manipulation, almost never from polypi.

Treatment. Being the result of inflammatory action, the treatment will resolve itself into two stages —the removal of the growth itself and the treatment of its cause. You are all, without question, perfectly familiar with the method of removal of polyps so we need not touch upon that. The question of the treatment of their cause involves the removal of the source of the inflammation and usually the site from which they spring, though we should bear in mind that hyperemic conditions, as produced by catarrhal rhinitis, are often the only discoverable cause.

MEMBRANOUS CONJUNCTIVITIS

Dr. William C. Meanor

Membranous conjunctivitis is a condition rather rarely met, stubborn to treat and often destructive to sight. Most authors have divided membranous conjunctivitis into two distinct classes, the croupous and the diphtheritic. The large majority of these cases come under the class of croupous. A bacteriological classification would seem to me to be more practical for, to intelligently treat such cases, the exact organism causing the infection, should be known. It occurs more frequently in weak and poorly nourished children but adults are not exempt. In the beginning the lids are slightly swollen and red. There is excessive lachrymation and some mucopurulent discharge with thickening of the conjunctiva. On eversion of the lids a membrane is found usually on the upper lid extending to the junction of the ocular and palpebral conjunctive. The membrane is thin and transparent at first, gradually becoming thick. It can be separated, leaving a raw and bleeding surface. The pain is variable, some cases experiencing practically none. Meyerhof, in examining 1,500 cases of conjunctivitis bacteriologically, found 110 cases in which the membrane was noted. Of these 110 cases he found the Koch-Weeks bacillus in 61 cases, Neissers gonococcus in 32, streptococcus pyogenes in 7 and the Loeffler in 5 cases. In 15 cases more than one of the above microbes were found in the membranous exudation or the coexistence of the staphylococcus aureus or the pneumococcus was revealed, but in no instance was either of the last two cocci found alone. As to treatment: in the early stages iced compresses should be used but owing to the danger of corneal complications should not be continued too long. Intermittent heat in the form of moist compresses must always be used on the first sign of corneal involvement. In fact in most of these cases moist heat may be used from the beginning and continued throughout the entire course of the disease without fear.

The thorough cleansing is of most importance and should be kept up at regular intervals. The normal salt solution or the boracic acid may be used, but in my experience the salt solution is much less irritating. Silver and its salts are the most reliable. Solutions of the nitrate, 10 or 20 grains to the ounce, should be applied to the lids by means of cotton applicators, being careful to neutralize the excess with the normal salt solution. The practice of dropping silver solutions into the eye by means of the pipette is a bad one and should be avoided. Optochin, argyrol and a number of silver preparations are good, but in the severer cases the nitrate is the more reliable.

In the diphtheritic form the early symptoms are much the same as in the croupous, except that they are more aggravated. The membrane forms in patches which rapidly coalesce. The membrane is not limited to the palpebral conjunctive, but readily spreads to the ocular, impairing the nourishment of the cornea which breaks down and often ends in total destruction of the eyeball. In going over the literature on this subject, I found a few cases reported in which the membrane has persisted over a period of several months, finally disappearing and leaving a healthy conjunctiva and normal vision. The case I wish to report has continued over a period of three and one-half years and while there is no impairment of vision, there is a marked granular conjunctivitis and possibly some loss of motion in the eyelid itself.

Clarence R., aged six months, came under my care in September, 1917. On the first visit this child presented all the regular symptoms of an acute conjunctivitis. The usual treatment was begun, and at the end of two weeks there was no sign of improvement, if anything the condition was worse. A membrane now formed on the conjunctival surface of the right upper lid closely resembling that of diphtheria. The membrane was about 1/16 inch in thickness, gray in color, and tough in character. The secretion from the lids was examined, showing the presence of staphylococci only. While there was always some discharge from the eye at no time was it excessive. After four weeks I decided to remove the membrane. It came off, leaving a raw bleeding surface. This surface was cauterized daily with a solution of nitrate of silver, but at the end of four or five days the membrane was fully reformed. A culture was made of the membrane and found to be loaded with pneumococci. Strange to say in all examinations made of the secretion, seldom were the pneumococci found; if the membrane was macerated they were found in abundance. During my absence in the army the case was treated by several other oculists, and upon my return I found the same condition that I had left except the other eye had been attacked. The membrane on the lids of the second eye only remained for a period of six months, disappearing and leaving the surface in a normal state. One year ago the child had an attack of pharyngeal diphtheria, making a good recovery after the administration of antitoxin. During the attack of diphtheria there was no change in the condition of the eyes. The fact that the condition has persisted over a period of three and one-half years without any corneal involvement seems remarkable. At present there is a ridge of granulation tissue about ⅛ inch thick and ¼ inch wide, occupying the middle third of the upper lid. There is a light membrane covering this mass. The remainder of the lid is very red and granular. Practically every treatment has been tried and the one thing that has brought about the present condition is the painting around the edge of the membrane with a solution of nitrate of silver varying from 10 to 20 grains to the ounce. During all this time the mother of this child has been very diligent in its care and treatment, otherwise the result would not have been so favorable.

Frederick B. Utley, Reporter.

ABSTRACTS FROM MENTAL HYGIENE

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BY EDWARD M. GREEN, M.D.

HARRISBURG

THE ROLE OF SITUATION IN PSYCHOPATHOLOGICAL CONDITIONS

ESTHER LOVING RICHARDS, M.D.

BALTIMORE

An interesting report of investigations into the cause and treatment of certain disturbances exhibited by a group of children in attendance upon the Out-Patient Department of the Henry Phipps Psychiatric Clinic.

Peculiar behavior, somatic complaints, asocial actions, temperamental outbreaks, and the like are often but the expression of difficulties experienced in attempting to make adaptation to the environment under circumstances productive of friction. Relief is frequently gained after a simple discussion of the problems involved and a common-sense explanation of the symptoms, together with changes in habits of life and the elimination, in so far as may be possible, of conditions which are active in the development of the phenomena.

The role of "situation" as an etiological factor in psychopathological conditions has not until recently been estimated at its proper value, although in the study of seventeen children here reported and in similar investigations, the disappearance of symptoms resulting from modifications in the environment demonstrates its importance. Among the etiological factors recognized in this group of cases are noted: unhappy home conditions, over-anxious, irritable or nagging parents, unwise methods of training, faulty habits of life, neglect of recreation, and lack of companionship. These children were brought to the clinic because of backwardness, muscular twitching, speech disturbances, somatic complaints, incorrigibility, enuresis, screaming, and emotional tantrums. By the employment of the measures mentioned above and in which both parents and teachers freely coöperated, for the most part, all of the seventeen children were greatly benefited, most of them being entirely relieved of the distressing symptoms.

The article includes case histories illustrating the examination of the patient and the situation, the suggested modification and the results obtained, while a chart is appended in which are recorded the chief points of interest in each case.

MENTAL HYGIENE IN INDUSTRY

C. McFIE CAMPBELL, M.D.

BOSTON

The keynotes of industrial organizations are output an efficiency, and whatever influences these desiderata must be of interest to the management. The mental health of the worker should be considered in any scheme for successful operation as this depends upon a number of factors such as the attitude of the worker toward his work, the assurance of what is popularly spoken of as "a living wage," upon opportunities for recreation, social intercourse and intellectual enjoyment. Dissatisfaction arising from the monotonous character of the occupation or labor leading to excessive fatigue, from lack of congenial companionship, unhappy home life, a future without promise, or from other cause may be reflected in the work and be shown by decreased efficiency, sometimes even by the development of physical symptoms which incapacitate one for any employment.

Reaction to this state of dissatisfaction may be manifested by a disposition to dwell in the imagination, day-dreaming and castle-building, by the adoption of a religious attitude towards life which finds compensation for the present in anticipation of future reward, by becoming affiliated with social organizations or secret orders, by indulgence in alcohol, by the development of an unhealthy interest in socialistic or anarchistic doctrines which, breaking away from reality, appeal so strongly to the uncritical mind.

A decrease in efficiency should lead to an investigation into its cause and the elimination, if possible, of any unfavorable influence discovered, the worker being followed into his home for the purpose of learning his domestic and hygienic environment, while his manner of employing the hours not devoted to labor may also afford a clue to his difficulties. The social worker should get into personal touch with the laborer and with sympathy and understanding assist in the solving of his problems.

Mental health and good morale are important factors in the successful operation of any industry and an enlightened public opinion in regard to the part played by such mental disturbances as suspicion, dissatisfaction, and misinterpretation among workers will lead to their correction and so contribute to social and economic stability.

HAS MENTAL HYGIENE A PRACTICAL USE IN INDUSTRY?

BOYD FISHER

BOSTON

Quite a number of large employers of labor, recognizing that not all workers have an equal capacity for laboring efficiency have devised certain schemes for the rating of employees, as the output is equally disturbed when a job beneath his ability is assigned to a skilled worker and when a poor worker is given one for which he is not competent. It has been found that even the mentally deficient man or woman may be quite productive in the simpler forms of occupation so that the wisdom of establishing a suitable relation between the worker and his work is apparent. The study of the individual, his environment both in the home and in the shop, his social activities, recreations, and in fact whatever tends to promote or to reduce his physical and mental wellbeing, is a department of mental hygiene which has a practical use in industry. If the conception of mental disorders can be broadened so as to include those states of mind which are responsible for absenteeism, dishonesty, conscious withholding of efficiency, strikes, and the like, the need for the practice of mental hygiene must be acknowledged. Modern industry has begun to appreciate the importance of studying mental conditions and applying psychological measures in remedying their disturbance as well as in preventing such occurrence, while the employment managers, either consciously or unconsciously, follow the principles of mental hygiene when they investigate labor conditions and seek to improve them.

Considerable caution is necessary in any attempt to study industrial workers from a mental hygiene viewpoint in order to avoid arousing suspicion and antagonism. The personality of the psychiatrist and his methods of work have a great bearing upon the success of his investigations as anything which partakes of mental third degree methods or any absence of tact in the manner of his approach will defeat the ends which he has in view. The inadequate supply of physicians having the necessary training in psychiatry and mental hygiene is an obstacle in the way of any plan for the general extension of this work. A further obstacle lies in the fact that efforts to enforce mental health embrace the adoption of a new philosophy of life and a new attitude towards social discipline and control, the necessity for which the subject does not admit and is inclined to resent.

Speaking from the standpoint of an employment manager, the author suggests that for the present only the modern medical approach to the subject of the practical application of the principles of mental hygiene in industry be considered; that attempts be made to clear up misconceptions in regard to mental hygiene; that recognition be given to the fact that it is already being employed; and that advances be made cautiously toward a more scientific and technical direction of the work already begun.

THE MENTAL HYGIENE ASPECTS OF ILLEGITIMACY

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The popular assumption that in the study of illegitimacy and illicit sexual relationships we are dealing for the most part with subjects whose mental condition is pathological, is due to the fact that investigations which have been conducted have chiefly concerned inmates of reformatories, homes, or similar institutions. The lower grades of mental defect are often associated with no especial interest in sex matters, but it is in the less marked departures from the normal that is found a lack of inhibition or a narrowed field of general interests which lies at the basis of such behavior as that under discussion.

In certain instances the undue and disproportionate urge for sex expression may be due to disordered functioning or to faulty development of the internal glandular system.

Another group is comprised of individuals who engage in illicit sexual relations as a means of overcoming "thwartings of activities in other directions." Reactions to feelings of injustice, inferiority, or those arising from difficulties in social or domestic adjustment may take the form of sex promiscuity and be practiced as attempts to compensate for other desires impossible of fulfillment. Finally, a large number of normal girls appear to "deliberately accept their sex attributes" as a means of attracting a certain attention from the community in which they move.

It is an axiom of mental hygiene that for every phenomenon of human behavior there must be a cause, therefore the investigator of illegitimacy and sex promiscuity must seek for this cause in the case of each individual coming under her observation. But discovery of the cause alone is worthless unless it leads to such explanations as will force the subject to realize her limitations and the necessity for control of antisocial desires, meanwhile aiding her to find socially acceptable channels into which these urges can be directed. This is the least that mental hygiene can offer the normal girl, but for the defective, institutional or other, adequate supervision should be provided.

It is desirable that every large community establish a center for the study of girls needing such attention and that this center should be provided with a psychiatrist, a psychologist, and a psychiatric social worker, as by such studies a key may be found to the problem of the unmarried mother.

THE EDUCATIONAL VALUE OF PSYCHIATRIC WORK

MARY C. JARRETT

SMITH COLLEGE

The position of the psychiatric social worker is at present not well defined nor is it possible to set a limitation to her activities. She is a specialist in the field of social adjustment and must have a well grounded conception of what constitutes a sound social condition. Psychiatric social work deals with all conditions and all relationships of life and is concerned in the discovery of factors physical, mental, personal, and environmental which may in any respect contribute to the development of mental disorder to the end that such disturbances may be prevented, or if already existant, that the proper remedies for their correction may be applied. It is further the best agency for spreading in the community a knowledge of mental hygiene and making researches into medicosocial conditions. It facilitates admission to clinics and hospitals and collects such data as may be helpful to the individual, to promote social consciousness among groups and to improve community conditions. The schools and industrial organizaitons furnish the greatest opportunity for preventive social work, for in the one instance instruction in mental hygiene given first to pupils finally reaches the home and the community, while in the other the establishment of a correct relation between personality and employment is essential to efficiency.

The mental condition of approximately 50 per cent of applicants for social assistance is such as to require attention and here also the services of the psychiatric social worker are in demand. As the future progress of welfare work must be based upon an understanding of mental processes the worker must have a knowledge of both psychology and psychiatry being trained in the study of human relationships and the art of making adjustments to actually existing conditions. Having such exceptional opportunities for studying individuals and for contact with various groups comprising the community the psychiatric social worker is especially well fitted for the task of disseminating information in regard to mental health and mental disease.

MENTAL HEALTH CLINICS

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DUNNING

Growing out of the nation-wide interest in the subject of mental hygiene and a realization of the importance of mental health to the welfare of the individual and to the community, a comparatively recent development has been the establishment of mental health clinics in various parts of the country. The interests of such organizations lie not only with mental defect and mental diseases but are so extended as to embrace all instances of mal-behavior arising from whatever cause, whether it be manifested by dependency, delinquency, crime, chronic invalidism, or other less potent failures to successfully adjust innate personal desires to the restrictions of society. The aims of the mental health clinics are, first, the study of the patient's mental and physical health with investigation of the social or environmental influences concerned in his methods of reaction; second, treatment of the individual with the minimum disturbance of social relations; third, early admission to an institution if this is considered advisable; fourth, continued treatment or supervision after discharge; fifth, research into the cause and treatment of mental disorder.

A series of 100 consecutive cases taken from a clinic maintained by the College of Medicine of the University of Illinois is analyzed by the author under the headings of "Problems Presented," "Types of Cases," "Agencies by which Referred," and "Treatment Recommended." Under the first it is noted that "38 per cent of the cases were referred because of difficulties in social adjustment and an additional 8 per cent because of mental symptoms which caused upsets in the social environment." Almost 50 per cent were referred because of bodily complaints which included such symptoms as nervousness, headache, etc. In one-third of the cases mental deficiency was noted, while an equal proportion suffered from psychoneuroses and psychoses, the remainder being neurological or medical in character. Treatment in the clinic was recommended for 41 of the number and social service supervision for 39, leaving only 20 per cent for whom institutional or dispensary care was advised.

The personnel of a mental health clinic should consist of a psychiatrist who should have full direction of its activities, a group of trained workers to investigate home and social conditions, make psychometric tests and keep in touch with the patient and his relatives, a staff of physicians to handle the purely medical and surgical cases, and finally an efficient laboratory technician. The clinic should be accessible to the district served, and located, if possible, in a dispensary visited by other classes of patients. All public-welfare agencies should be affiliated with the clinic and the coöperation of physicians and the people of the community should be secured. The influence of such an organization will go far towards keeping the general public informed upon matters of mental hygiene and will lead to a feeling of greater confidence in the activities of the state hospitals.

LAWS CONTROLLING COMMITMENTS TO STATE HOSPITALS FOR MENTAL DISEASES

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BOSTON

"Insanity" is a legal not a medical term employed to designate a group of very different mental disorders, while in the codes of the several states its application may vary between wide limits. Except in legal phraseology the use of such words as lunatic, asylum, etc., is fast becoming obsolete. The difficulty encountered in doing away with a trial by jury for the so-called insane, and which is still in force in at least three states of the Union, was the possibility that without such a safeguard one might be deprived of his liberty without due process of law. Fortunately more liberal methods of legal commitment have been adopted with the recognition of "insanity" as a form of mental disease for which treatment should be instituted promptly.

The procedure now generally followed in securing the commitment of an insane person to a hospital for mental disorders includes: first, an application for such commitment; second, the certificate of two qualified physicians, or a commission appointed by the court, to the effect that the person is insane and requires care and treatment in an institution; and third, an order of court directing such commitment. In some states it is specified by whom the application shall be made, while in others anyone may take the initiative. Personal service of notice of the hearing is mandatory in some sections and discretionary with the court in others, while the presence of the person whose mental condition is under investigation is likewise determined. After commitment has been ordered by the court, procedure also varies as to conveyance of the patient to the hospital. In certain instances this duty devolves upon the sheriff or some other court officer, while in others experienced nurses from the hospital are sent for the patient.

As an outgrowth of modern conceptions of mental disorders and the methods of handling them provision for voluntary commitment has been made by twenty-nine states. In these instances the patient must be in condition to realize the nature of his request and his need of treatment, he must sign the application for commitment and must be released in a specified time after demand for release has been made in writing. The length of time in which one can remain as a voluntary patient is usually prescribed but varies in different states. Reception for temporary care and observaion is provided for by fifteen states and the District of Columbia, although even here the period of stay in the hospital is not uniform. The laws of New York and Massachusetts are reviewed at length and attention called to the especially desirable features of each. The excellent provision of the Massachusetts law by which one accused of crime may be held in a state hospital pending the determination of his mental condition might profitably be followed by other states. As the result of an extended study of methods of commitment made under the auspices of the National Committee for Mental Hygiene the following recommendations were made: legislation in all states authorizing temporary care, emergency care, observation pending the determination of insanity, and voluntary admissions.

THE STATE PSYCHOPATHIC HOSPITAL

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Observation, diagnosis, treatment, research, and teaching are the chief functions of a state psychopathic hospital. In order that it may fulfil its purpose of being a teaching center for psychiatric training, connection with a state university or medical school is desirable, but when no such institution is maintained the location of the psychopathic hospital should be determined by the size of the community, the proximity to general hospitals and those for mental disorders, or by special facilities offered in other situations. By administrative control vested in a board of trustees chosen from the trustees of the state university and those of the state hospitals for mental disorders its relation to state teaching and other state organizations will be given due consideration. While existing conditions must determine the size of such a hospital it should be large enough to furnish a wide range of clinical types for teaching purposes and to maintain the interest of the medical staff. As a general proposition it may be stated that provision should be made for not less than fifty nor more than one hundred patients. The hospital being maintained for diagnostic purposes rather than for treatment, every diagnostic aid should be at hand. These will include all apparatus of proven value, laboratories, classrooms, and libraries with full equipment for each. The limited capacity and special purposes of a psychopathic hospital render it necessary to exercise some selection in the classes of patients admitted. Certain forms of mental disorder are not suitable for admission to such an institution, while the psychoses associated with physical disease, the neroses, the psychoneuroses, and the mild conditions which do not justify commitment to a state hospital are especially adapted to the type of service rendered. The psychopathic hospital should furthermore be in close touch with the schools, the courts, all welfare agencies, and especially with the state hospitals. It might also fill the position of a psychiatric institute and so become a valuable adjunct to the state hospital, its facilities being at all times at the disposal of the latter, special courses of instruction being provided for members of their medical staffs. Liberal legal requirements for the admission of suitable cases should be made in order that as little formality and publicity as possible may be encountered by those in need of the hospital's services. Close coöperation with the courts is also to be desired so that criminal and juvenile cases may be received. The social aspects of psychiatric problems can best be investigated in such an institution by trained psychiatric social workers whose activities can be extended to embrace both intramural and extramural interests. An additional feature of the psychopathic hospital is the maintenance of an outpatient clinic, and the social service work associated with the study of its patients. Such a hospital should be a center of education in mental hygiene and keep the public informed in regard to whatever is injurious or beneficial to its mental health. The possibilities for practical service are only limited by the personnel of the organization and the support accorded by the state.

RECORDS AND STATISTICS IN OCCUPATIONAL THERAPY

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The collection of accurate data concerning occupational therapy, its operations and results, is desirable in order that the future progress of the work may not be impeded by efforts along lines known to be unprofitable but rather enhanced by the utilization of all measures of proved worth. An account of what is being done in this direction as well as what has been done in the past will be of service to others and remain as a valuable record which should not be entrusted to memory alone. A uniform system of collecting such date will render easy comparison of the work done in different hospitals, while the progress made in a single institution can readily be recognized. Such records should be simple, easily kept, and supply all the information desired. The author recommends for this purpose an index system containing four cards for each patient, the first being a prescription card made out by the physician, the second an administrative card showing the record of instruction, third, a class-attendance register, and fourth a yearly statistical card to be used for analyzing the results of the year and in the preparation of such statistical tables as may be desired.

A similar system of such records, if generally adopted, would aid in the solution of many problems with which occupational therapy is now concerned and promote the employment of such measures as have been found to be productive of results, while at the same time it would dignify the position of the instructor and contribute greatly to his or her efficiency.

A STUDY OF THE ECONOMIC STATUS OF FORTY-ONE PARETIC PATIENTS AND THEIR FAMILIES

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MAIDA H. SOLOMON

BOSTON

This study concerns the families of forty-one male paretics whose ages varied between 20 and 50 years and who had been committed to hospitals for mental disorders. The investigations were made for the purpose of determining the industrial status of the patient in relation to his disease, the effect of his illness on the wife and children, and the necessity for family aid because of it. Only those families were selected which consisted of a mother and one or more children and whose proximity admitted of reliable data being collected.

Thirty of the patients had earned more than $900 annually during a period of five years immediately preceding the illness, and twenty were earning their normal salaries at the time of admission to the hospital, although their former efficiency was not retained. The decline in the capacity for work was in 27 instances dependent upon a general mental deterioration which was manifested by slowness and inefficiency. The periods over which this decline was recognized varied in different cases from a few days to more than two years. Nineteen of the number worked irregularly, some failing to report for duty while others changed employment more or less frequently. The reasons ascribed for leaving the last job were of a medical nature in 25 instances, industrial in 16. The large majority, while not efficient, were actually out of work only from a few days to six months before commitment. As the result of the reduction in income the wives of 18 of these patients were compelled to seek employment. Of the 108 children in the 41 families 75 per cent were under fourteen years of age, while 22 children of the 14 mothers employed out of the home were under six years of age. There appeared however to be no increase in child labor because of the father's illness but certain of the older children already at work were forced to assume the full burden of the family's support. It was also found necessary to place one-tenth of all the children in other families or in institutions. Permanent financial aid was required for 26 families and temporary aid for three. This aid was supplied by relatives, public agencies or private charity. At the time the investigations were conducted the family income of 30 of the 41 families was smaller than when the patient left work.

THE SIGNIFICANCE OF SPIRITUALISM

CLARENCE O. CHENEY, M.D.

NEW YORK, N. Y.

The chief arguments advanced for the belief in a life after death are first, the "proof from universal consent"; second, man's instinctive aspiration toward the ideal; third, the immortality of the soul as a part of indestructible substance; fourth, that an opportunity for the attainment of justice in a future state must be given if right is to prevail; fifth, the promises of religion as to everlasting life.

The strivings, dissatisfactions or realization of the incompleteness of the present life are responsible for the conscious or unconscious desire for a future existence in which full compensation may be found. While there can be no actual proof of life after death the wish to believe is the strongest factor influencing the conviction of its truth. Spiritualism, like religion, is a matter of emotion not of reason, of faith not of scientific proof, while the need to get away from unsatisfying reality is operative in the spiritualist as in the hysteric or the psychotic, each of whom accepts as true hallucinations and apparitions despite adequate proof to the contrary. The wish to believe that departed relatives and friends have not ceased to exist, that they survive and may be communicated with, determines its acceptance by those whose emotional state is abnormal by reason of feelings of emptiness and loss resultant upon the death of a loved one. Acceptance of spiritualistic teaching depends therefore upon dissatisfaction with reality and a desire for its relief. Investigations made by scientists, and which they claim to be controlled by reason and uninfluenced by emotion, are not convincing, for the lives of many of those investigators prove that the same conditions are operative as in the case of the less intellectual individual. Spiritualistic belief is apt to absorb the individual, displacing the practical interests of life and rendering him unproductive; consequently it is not to be encouraged. At the same time the author would not deprive one of a belief which afforded comfort and made life more tolerable if it did not unduly interfere with the everyday interests and relationships required by the social system under which he lived. The reaction of the individual to his belief should determine the advisability of attempts to direct his interests into channels more in harmony with reality.

SOCIAL FACTS RELATIVE TO PATIENT WITH MENTAL DISEASE

EDITH M. FURBUSH

NEW YORK

The statistics upon which this communication is based were collected for the year 1919, according to a uniform system from 46 hospitals of 12 states so situated geographically as to render their combined reports fairly typical of the country as a whole. The figures as given refer only to persons admitted for the first time to hospitals for mental disorders, and are here studied from a point of view different from that reported in the April issue of *Mental Hygiene*.

As to sex distribution it appears that the greatest disparity is found in Arizona where the ratio of males to females among first admissions is as 3½—1, although in all other states except New Hampshire males exceeded females in number. The data furnished by only ten of the states were applied to the matter of citizenship. Of the total first admissions 20.7 per cent were alien but if those who were citizens by naturalization be included the total would constitute 33.9 per cent who were foreign born. The hospitals of Massachusetts and New York together received 92 per cent of these aliens. It was found also that of those whose civil condition was ascertained 41 per cent were single, 42.6 were married, and 13.5 per cent were widowed.

In the study of environment the term "urban" refers to places having a population of 2,500 or more, while "rural" covers all others. Contrary to the general impression the collected data show that 69.9 first admissions out of a general population of 100,000 of the same environment were from urban districts and only 37.9 from rural.

With reference to economic condition it was found that 13.9 per cent were "dependent," 68.5 per cent "marginal," and 17.6 per cent "comfortable," the latter term indicating that a saving above the daily needs had been made. As the data applied to the year 1919, at which time wages were exceptionally high, this must be taken into consideration before assuming that the same proportion of comfort exists to-day.

In regard to age distribution it was shown that the greatest number of patients are first admitted between the ages of 25 and 40, the ratio being practically the same for each five-year period within those limits.

Only nine states supplied data available for the study of habits in regard to the use of alcohol. More than half (50.6%) of the patients admitted were found to be abstainers, while 32.8 per cent were temperate in their habits, leaving only 16.6 per cent who were intemperate.

To this statistical study is appended nine tabulations giving the consolidated reports of the 46 hospitals above mentioned.

PROPAGANDA FOR REFORM

Thyroid in Obesity.—J. H. Means carried out studies which show that the basal metabolism is normal in cases of simple obesity. The widespread treatment of obesity by the administration of thyroid preparations is a device for raising metabolism to an abnormal level. The treatment of simple obesity by producing a state of hyperthyroidism has recently been designated as pernicious by Means. Simple obesity can now readily be differentiated from the obesity due to endocrine disorders by determination of the basal metabolism. If this is normal, weight reduction should not be attempted by the use of thyroid (*Jour. A. M. A.*, Sept. 3, 1921, p. 792).

A New Selenium Cancer Cure.—Medical journals have received "news items" from the "Medical News Bureau" (D. E. Woolley, manager) which announce that for the purpose of further developing methods of control and treatment of disease by the use of selenium and tellurium, the Basic Cancer Research has been organized and a laboratory established at 847 Union St., Brooklyn. Newspapers, on the other hand, have received free publicity matter from the Cosmopolitan Research Society (D. E. Woolley, secretary) according to which this society has been founded to investigate and develop methods for the treatment of cancer. It is further stated that "Dr. Frederic Klein, the eminent authority on urinology and the chemistry of cancer, has evolved a new colormetric test which is the most wonderful and valuable discovery in the diagnosis of cancer and various other diseases." Klein is the gentleman who made "Sulpho-Selene" a cancer "cure" which the Council on Pharmacy and Chemistry refused recognition some years ago. Is "Sulpho-Selene" to be resurrected? (*Jour. A. M. A.*, Sept. 3, 1921, p. 805.)

Treatment of "Hay Fever."—Although the essential features of the etiology of "hay fever" are believed to be understood, the treatment is still largely of the hit or miss type. Preparations of mixed pollens are distributed by commercial houses and used by physicians in the hope that some ingredient will prove to be potent. Several facts seem at length to be so well established that they may serve almost as axioms in the clinic of hay fever. One of these is that although the offending pollens vary in different parts of the world as well as at different seasons, the number chiefly responsible for the attack in any single locality is comparatively small. Hence it becomes the duty of the physician to familiarize himself with the offending pollens in his locality or the locality whence his patients hail. Fortunately I. C. Walker has reported on the pollens which are responsible for "hay fever" in the New England states; G. Selfridge on those in California; K. K. Koessler for Illinois, and W. Scheppegrell for the Southern states. It is important that for each case of "hay fever" the offending pollen should be determined by skin tests and also that the treatment should be preseasonal (although treatment during the season may sometimes benefit). In extenuation of the frequent failure to relieve patients, it is to be noted that certain persons have symptoms ranging from sneezing to asthmatic attacks due to the odors of flowers that have no pollen as well as to the presence of nonspecific factors in the respired air. Obviously, pollen extracts are of no avail in such cases (*Jour. A. M. A.*, Sept. 3, 1921, p. 791).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: Equinox Lithia Water (Equinox Mountain Spring Co.), falsely claimed to be a natural mineral water. Antilaiteuse (Dr. N. A. Sirois), consisting essentially of Epsom salt and ground juniper berries falsely claimed to be able to cleanse and relieve the body and blood of all poisonous impurities. Madam Dean's Female Pills (Martin Rudy), consisting essentially of quinin, aloes, ferrous sulphate, hydrastis, ginger and cornstarch, falsely claimed to give relief in female disorders. Donaldson's Wonderful New Life Remedy (T. Donaldson Medicine Co.), essentially an alkaline solution containing Epsom salt, senna, plant extractives, alcohol and small amounts of volatile oils, falsely claimed to be one of the greatest kidney medicines in the world. Prescription 999 (Combination Remedy Co.), a mixture of fixed and volatile oils, including oils of sandalwood, nutmeg and copaiba, and falsely labeled as a remedy for gonorrhea or gleet. Kellogg's Sanitone Wafers (F. J. Kellogg Co.), containing salts of iron and chromium, a laxative plant extractive, red pepper and a trace of strychnin, sold under the false claim that locomotor ataxia is curable with chromium sulphate. Acme Brand Pennyroyal Pill (S. Pfeiffer Mfg. Co.), consisting of aloes and oil of pennyroyal and tansy, sold under claims usual to nostrums for the alleged cure of suppressed menstruation. Cadomene Tablets (Blackburn Products Co.), consisting essentially of zinc phosphid, strychnin and iron salts and recommended for neurasthenia, general debility, melancholy, etc. Leonardi's Injection No. 1 (S. D. Leonardi and Co., Inc.), essentially an alkaline solution of borax, camphor and berberin, and falsely claimed to be an effective remedy for gonorrhea and gleet. Dr. J. H. McLean's Sarsaparilla Compound (Dr. J. H. McLean Medicine Co.), a "blood purifier" consisting essentially of iodines, a laxative plant drug, saponin (sarsaparilla), plant extractives, salts of iron, potassium, and sodium, sugar, alcohol, and water (*Jour. A. M. A.*, Sept. 10, 1921, p. 879).

The Expensive "Poor Man's Medicine."—A favorite argument of the nostrum exploiters, advanced when threatened with restrictive legislation or taxation, is that "patent medicines" are the poor man's medicine. Never had a pretension a flimsier basis of fact. The purchaser who buys a bottle of Dr. Quack's Quick Cure does not realize that about 75 cents of his dollar has been expended by Dr. Quack in an effort to convince him that he is suffering from something for which "Quick Cure" is a sure-shot remedy. The abolition of "patent medicine" advertising would do much to abolish the making of hypochondriacs by suggestion and would result in a great decrease in all drug taking. In addition, if John Doe purchased a simple home remedy, he would have to pay for the cost of the medicine only and not for an expensive advertising campaign to promote its sale (*Jour. A. M. A.*, Sept. 10, 1921, p. 867).

The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: Mott's Compound Female Pills (Williams Manufacturing Co.), consisting essentially of aloes, ferrous sulphate and cantharides and falsely claimed to restore the menstrual flow and to be beneficial in female disorders. Job Moses, J. Clark's Female Pills (Williams Manufacturing Co., and Eastern Drug Co.), consisting essentially of aloes, a salt of iron and oil of peppermint, falsely claimed to be good for many painful and dangerous female disorders. Gono Capsules 761, Renol Capsules, and Gonna Specific (Grape Capsule Co.), capsules containing salol, oleoresin of cubebs, copaiba balsam, pepsin, cottonseed oil and plant extractives and falsely labeled as remedies for "Gonorrhea, Gleet and all Kidney and Bladder Troubles." Haskins Nervine (Haskin Medicine Co.), a solution of Epsom salts, sweetened, flavored and colored, and asserted to be the great nervine and blood purifier and for the treatment of a very long list of disorders (*Jour. A. M. A.*, Sept. 17, 1921, p. 958).

Diphtheria Preventive Measures.—It seems likely that the securing of widespread immunity is to be an important aim in the prevention of diphtheria. In this work the Schick test, whereby the existence of immunity or susceptibility to diphtheria can be determined with ease and precision, seems destined to play an important part. Thousands of tests have been applied to school children of New York. Further, in the recent test of more than 52,000 school children of New York, those who gave a positive test were injected with toxin-antitoxin mixture to secure active immunization. If the medical profession accepts the contention that the Schick test is a reliable indication of the susceptibility to diphtheria and, further, that the currently proposed methods of toxin-antitoxin injections are effective in developing a lasting immunity, a great step in progress will have been made (*Jour. A. M. A.*, Sept. 24, 1921, p. 1025).

Maghee's Epilepsy Treatment.—This is sold on the mail-order plan by Thomas G. Maghee, M.D., Lander, Wyo. The product is advertised with the claim that it stops all seizures from the first day of its use. A five-dollar size package containing 40 capsules, was submitted to the A. M. A. Chemical Laboratory for analysis. The examination indicated that each capsule contained about 1 grain phenobarbital (luminal), ½ grain charcoal and a little bismuth subnitrate. There is no rational excuse for the sale of phenobarbital (luminal) in a secret mixture sold for the self-treatment of epilepsy (*Jour. A. M. A.*, Sept. 24, 1921, p. 1037).

ACTION OF CASCARA SAGRADA

Hugh McGuigan, Chicago (*Journal A. M. A.*, Feb. 19, 1921), does not agree with the view usually set forth in textbooks that cascara sagrada is an ideal drug and fool proof. He would confine its use to those cases in which from 1 to 2 c.c. has a definite action. Larger doses would seem to do more harm than good. They may produce an inflammatory condition of the bowel, with pronounced nausea and griping. The nausea may be produced by the therapeutic doses recommended in some textbooks. It only rarely leads to vomiting. Cascara should be used only as a laxative, never as a cathartic. When more than 2 c.c. of the fluid extract is needed to produce a laxative effect, another drug should be added or substituted. Small doses several times a day seem to give better results than the sum of these doses given in a single dose.

CHRONIC SYSTEMIC INFECTIONS AND THEIR SOURCES

The increase of knowledge regarding the relation of acute and chronic local infections to more widespread and often disabling diseases, Ernest E. Irons, Chicago (*Journal A. M. A.*, March 5, 1921), says he has made possible the prevention of much suffering and has been the means of restoring to health many of those who seemed in previous years to be condemned to recurrent disability and even permanent invalidism. The dental profession has contributed largely to this end by introducing methods for the recognition and cure of infections about the teeth. While experience teaches that the removal of alveolar abscesses frees certain patients from recurrences of their arthritis or other metastatic lesions, and while it is fairly clear why such a result is often to be anticipated, it is not so evident why many other alveolar abscesses remain symptomless and, so far as can be determined, wholly unassociated with metastatic disease.

Infancy and childhood are the danger periods for tuberculosis, says the U. S. Public Health Service. To protect your child, pasteurize the milk or use certified milk; protect infants and young children from contact with the sick; and keep the growing child strong and well by seeing that it drinks milk, eats vegetables, avoids excessive fatigue, and gets enough sleep.

IN MEMORIAM

Whereas, Dr. William M. Welch, one time president of the Philadelphia County Medical Society, and for thirty-three years a member of its Board of Censors, has departed from this earth and has passed to the Great Beyond; and,

Whereas, His position in the medical profession was unique, in that he inspired a degree of esteem and affection on the part of his colleagues rarely accorded; and,

Whereas, Few men had so many friends and no man fewer enemies; and,

Whereas, This appreciation of the man was primarily due to his attractive personal qualities, among which gentleness and kindness were present in overflowing degree; and,

Whereas, Dr. Welch was connected with the Philadelphia Hospital for Contagious Diseases for over fifty years and, as result of daily contact with contagious diseases, destroyed his opportunities for private practice, unselfishly serving the city at an honorarium much too small, in view of his vast experience and preëminent skill in the diagnosis and treatment of contagious diseases; and,

Whereas, Dr. Welch, during this long period of time, performed his duties with unexampled kindness to those committed to his care and with uniform courtesy to all those with whom he came in contact; therefore, be it

Resolved, By the Philadelphia County Medical Society, in session assembled, that we express our great sense of personal and community loss in the taking off of this man, possessed of great talents and a great soul, and that our sentiments, herewith recorded, be transmitted to the members of his bereaved family.

Be it furthermore resolved, That these resolutions be forwarded to the public press in order that the latter may be given an opportunity of expressing its appreciation of a citizen whose whole life was service, and to whom the people of Philadelphia will forever remain indebted.

William Duffield Robinson,
McCluney Radcliffe,
Charles M. Seltzer,
C. B. Longenecker,
J. Morton Boice,
Jay F. Schamberg.

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October, 1921

EDITORIALS

THE SECOND YEAR

With this number of the Journal begins the second year under the management of the Publication Committee of the Medical Society of the State of Pennsylvania. In the background of the past year's work stand twenty-three years of previous Journal history. A review of those years could be made with profit, to show the progress of medical journalism, as well as the advancement which the State Society has made during that time. Such a review would give a splendid history of the men and women who have lived and practiced medicine in the state and who have made possible everything which goes toward the improved conditions under which the present practice now exists.

When we undertook the work connected with a journal as important as that which the State Society now controls, it was with no small trepidation that the future was scanned as to the possibilities of making the Journal a better one and one of greater usefulness. What has been produced during the past year is now a matter of history. Would that we were able to listen to the mental and verbal comments which have been made in a critical way by the members of our Society, so that we could profit by such criticisms for future benefit. Visions without material endeavor will not produce. As we look toward the work of the Journal for this fiscal year, we reach out in anticipation of something better than that which has been produced in the year just closed. If this something better is to happen, and the Journal take its rightful place with the best state publications of the country, it must receive a most generous support on the part of those who are willing and able to write, as well as on the part of those who have the interests of the State Society at heart. This can best be accomplished if we receive a small amount of material from many rather than a large amount from a few.

Editors are but human, and the tendency is toward self-effacement rather than the using of the pages of the Journal for the purpose of personal expression. In this foreword to the second Journal year under State Society control, may we not anticipate that these words will reach those who feel a real interest in journalistic progress and who will not hesitate to see what Pennsylvania should have?—the best medical state publication that it is possible to give the members of our Society.

THE SUMMER CAMP AND TYPHOID

The number of cases of typhoid fever that have developed this year while at "summer camps," or visiting in the country, should be sufficient cause to sound a note of warning. As typhoid fever is a preventable disease, who is to blame?

Would it not be advisable to have someone trained in sanitation to pass upon the water supply for such camps? The State Department of Health, through its local health representatives, easily could require this to be done. A certain church in one of our cities established a camp on the Perkiomen for three weeks. The boys were at camp two weeks, and the girls one week. The sanitation of the camp site, however, was first passed upon by a physician, trained in sanitation; none developed typhoid fever. How many such camps, however, are established and maintained under proper medical supervision?

An organization in this state established a camp for its members in the eastern part of the state during the summer. The water supply, which was satisfactory, ran low. Water from a spring (without first being examined) was "turned in," and a typhoid epidemic followed. The State Department of Health should have supervision over such camps and permits be required, in order to reduce to a minimum such recurrences. F. C. H.

INFANT MORTALITY

Infant mortality is the subject that has given sanitarians an unlimited amount of care and concern and the best method of controlling or reducing it is worthy of the most attentive study. It has been demonstrated, to the satisfaction of all concerned, that it is possible to do so. Summing it all up, it becomes a question of maternal education.

The question arises, How to educate the mother? Too frequently, the physician is called after the mischief has been done. When the opportunity affords, the physician should give prophylactic advice to the mother; most of which, however, is quickly forgotten or cannot be recalled when needed.

The results of a system adopted in a certain community some years ago warrant a trial. A few simple rules were drawn up, with added information on the care of infants during the hot season. These were printed in English, German, Polish and Italian, and a copy was mailed to each mother from whom a birth certificate had been received during the preceding year. To ensure efficiency, the mailing was done at the beginning of the hot season. F. C. H.

ENDOCRINOLOGY

Dr. Cushing's presidential address to the Association for the Study of Internal Secretions, published in a recent number of the *Journal* of the American Medical Association[1] strikes a most refreshing note at a very opportune time and on a particularly auspicious occasion. Dr. Cushing's keen sense of humor acts as a sugar coating to the bitter pills which he gently but firmly administers to the over-enthusiastic endocrinologists. The address is well worth reading, combining as it does to a rare degree instruction with entertainment.

The field of endocrinology is, without doubt, one of the most interesting fields in medical research but it cannot be too often pointed out that we have but scratched the edge of this vast field in regard to its physiology, pathology, and therapy. Valuable editorials along this line have appeared in the J. A. M. A. pointing out that it must be admitted that the physiology of the endocrine glands is still in the stage of chaos;[2] and that we have no more proof that epinephrin is a normal product of suprarenal activity with a definite function to perform in the organism than we have proof of the same postulate regarding morphine in the poppy plant.[3]

We appreciate most highly the good work that has been done and the promise of therapeutic "milk and honey" which this promised land holds out to us.[4] We ask only an attitude of critical conservatism towards the data offered and an attempt to distinguish between the real endocrinologists and the false prophets who have something to sell.

It is necessary only to compare the preparations offered and the enthusiastic claims made for the same with the few facts actually established and accepted by the leaders of the medical profession and to realize that the manufacturers of these things seem to flourish, to be convinced that theory has already eloped with practice.

On the old charts and maps of a few hundred years ago there are pictured sea serpents, griffons, mermaids, and unicorns. Human impatience ever runs before actual discovery, beckoning her on. Imagination creates the working hypotheses that are the forerunners of established laws. I remember a stuffed mermaid with very imposing credentials which I often admired in the old Boston Museum of fifty years ago. A guileless arab sold a unicorn's horn to a friend of mine. In the same way to-day the Arabian Knights of commercial pharmacology offer us, with most plausable and apparently unimpeachable credentials, the mermaids and unicorns of "pragmatic endocrinology." L. L.

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1. Disorders of the Pituitary Gland, J. A. M. A., 76-1721, (June 18) 1921.
2. The Endocrine Glands; A Caution, J. A. M. A., 76-1500, (May 28) 1921.
3. Disappointment of Endocrinology, J. A. M. A., 76-1658, (June 11) 1921.
4. Stewart, G. N.: Adrenal Insufficiency, Endocrinology, 5-283, (May) 1921.

ORATORICAL FASHIONS

Postprandial oratory, we believe, is responsible for more dyspepsia and suffering than even the excessive long-drawn-out feeding. The poor martyrs cast for parts in the dreary farce to come can neither eat calmly, nor digest well, on account of the terrors that approach, and the poor hearers know they have to suffer for the delights of the banquet by listening later, or by an impolite escape through the "side door." All are impaled and must suffer at the hands of a senseless fashion.

Very few men are capable of entertaining an audience with spontaneous wit, and even these, if we but knew, spend a sleepless previous night preparing and memorizing the bright extempore things that are to be said. A Philadelphia lawyer, now deceased, once said that the best after-dinner speeches he made were in the cab, on his return home. We try to be kind, we laugh, we applaud most loudly, to encourage the trembling, wriggling speaker, who, when he sits down, does so with the attitude *Thank Heaven, that's over.* One, naturally, feels that as our singing is by artists hired for the purpose, why should not our speaking be done for us by hired orators?

F. C. H.

EX LIBRIS MEDICI

A DIFFERENCE OF OPINION

"What are doctors good for?"

"What, indeed!" As we made this astonished answer, we looked the old man directly in the eyes with a cold and chilling gaze intended to intimidate him—a kind of "bluff" on our part—to give us a breathing space, find out what he had in mind and let us get our wits together to answer worthily.

But he was not to be disturbed and returned the glare with perfectly clear, honest eyes in which there was a mischievous twinkle.

We got up and opened a drawer in our card catalogue, from which in a moment we withdrew a card which we handed him. "You see the very question was asked and answered some eight years ago by Dr. Abraham Jacobi—"What Are Doctors Good For?" Clinical Excerpts, Aug., Sept. and Oct., 1913.

"Ah!" he said, "you know that paper, do you? Do you think it answers the question? Not at all. It only tells what a doctor thinks they are good for. It was a doctor that wrote it. I once heard Jacobi say that doctors built the Panama Canal. Do you think they did?"

"Well," we said, "they certainly had a good deal to do with it."

"Uh, hu," he grunted, "they certainly helped, but what he said was that they built it. That is the way doctors have of appreciating their work. They always over-rate it. If one really wants to know about doctors he must ask their patients or the public generally. What he would learn would give him a jolt if he belonged to the profession."

"Well," we queried, "what have you found out from the public?"

"I haven't asked them, because I don't know how to reach them, but I have asked the writers of books, and some of the things they say are very interesting and suggestive. I think it is a fair method. Doctors write books in which they tell about themselves and their successors—as old Dr. Jacobi did—and other intelligent men write books in which they tell about their doctors and their failures. If we accept the one, it is only fair that we do the other as well."

"But do you think a layman capable of correctly appreciating the special kind of work that we of the medical profession do?"

"Do you think that an average intelligent and educated man, because he lacks technical knowledge is less able to appreciate the benefit he derives from medical or surgical treatment than his doctor; to recognize the value of evidence and the justice of decisions than a lawyer; to enjoy the harmony and rhythm of music than the composer; to feel the passion of verses than the poet; to recognize the beauty of color and grace of form than the artist; or experience contrition and repentance than the priest? I don't."

We expressed ourselves as agreeing with him in so far as to believe that cultivation enabled men generally to appreciate the things mentioned, but as differing in the belief that special cultivation—what he had chosen to designate technical knowledge—gave them a much keener power of doing so.

"Well now let us put it to a test. If you had gangrene of the feet, and if in spite of all your doctor did the disease continued to spread upward, do you think that the technical knowledge of the doctor would enable him to appreciate better than you could that he was doing you no good? If you were gradually bleeding to death from internal disturbance that kept on constantly getting worse, do you think that the doctor could appreciate it better than you because of his technical knowledge? Of course not."

We agreed to the special examples given, but refused to commit ourselves further unless we were informed concerning his ultimate conclusions.

"Do you ever read the Bible? Excuse such a personal question, and make no apology. I know that it has gone out of fashion of late years, and most people scarcely recognize the Ten Commandments when they hear them read. Well, there is something about doctors in the Bible. No, I didn't suppose you would know about it, but if you will read the sixteenth chapter of the second Book of Chronicles, you will learn that King "Asa in the thirty and ninth year of his reign was diseased in his feet, until his disease was exceeding great; yet in his disease he sought not to the Lord, but to the physicians. And Asa slept with his fathers and died in the forty and first year of his reign."

We could not help expressing ourselves as in doubt whether this was intended to be a slam at the court physicians, or a slur upon the religious faith of the king or an endeavor to prove that Jehovah was a very jealous God.

"In St. Mark 5:25 you can read about "a certain woman with an issue of blood twelve years, and had suffered many things of many physicians, and had spent all that she had, and was nothing bettered, but rather the worse......"

"Poor woman," we said, "she suffered from some incurable malady as many in our own time do."

"Exactly so, and there are many physicians in our own time that would do just what they did in her time, take all she had without making her any better, but rather leaving her worse."

"But," we said, "they doubtless did all that they could for her."

"Of course they did. I am not saying anything about that; what I am driving at is to show that the physicians who did that, like those that still do it, are not held in high esteem among their non-medical contemporaries. If you will read Æsop—I think he lived in Greece about six hundred years before the beginning of the Christian era—you may find this story:

" 'An old woman with sore eyes called in a doctor, who for a price agreed upon, was to call at her house and cure her by the application of an ointment. During these visits, the old woman could not see the doctor, who removed all her household goods, one piece after another. When all was taken, the patient's eyes were cured, and the doctor demanded his fee which the woman refused to pay. She was haled before a magistrate to whom she made the following explanation: I promised to pay this man if he restored my sight, but my vision has grown worse; before he began I could see my furniture, but now I can see none.' "

We could not help smiling at the humor of the story, but we were annoyed at the teller, and hastened to point out his unfairness. "This man," he said, "was a thief. As a doctor he seems to have been all right, for the story says that the woman was cured; as a thief, he is no reflection on the medical profession, for we are not thieves."

"Well, as my friend Dr. Charles W. Burr says, "Let your sense of humor serve you." "The man was a thief because he took more than he was entitled to. Of course no one in the noble profession of medicine ever does that!"

What we might have said to this we are not certain; our ire was aroused, and as we looked daggers at our old friend, he took up his hat to go.

"By the way," he said in passing through the door, "if you want to know more about these things, consult a little book called "The Evil That Has Been Said of Doctors," by Dr. S. J. Witkowski. It was published in 1889."

PROGRESS OF WESTERN MEDICINE IN CHINA STILL DIFFICULT

It is not easy for a Westerner to appreciate the tremendous difficulties which have to be overcome in introducing modern medicine in China. One of the underlying difficulties is doubtless the deeply rooted belief, handed down for forty centuries, that the medical profession is not of first rate importance. A sentiment ingrained in a nation of four hundred million people cannot be changed over night, but beginnings have already been made by the work of various medical institutions under missionary and other auspices in China. The modern buildings and efficient organization of the Peking Union Medical College will surely help to dispel the Chinese belief that the medical profession is necessarily degrading.

The Chinese people generally have an apathetic and fatalistic attitude toward sickness and disease. Like our forefathers only a few generations ago, they are willing to believe that illness is a visitation of Providence for the punishment of their transgressions. As long as such views prevail there can be no real progress.

Chinese medicine is to a large extent a matter of tradition rather than of science. Throughout China native physicians toy with life and death with childlike faith in the principles of medicine laid down by the mythical Yellow Emperor, Huang-ti, about 2696 B. C., while hundreds of millions of people are still content to be treated in accordance with precepts, dating back for centuries, filled with many of the most palpable absurdities and mingled with charms and mystic diagrams in profusion.

China from time immemorial has had practitioners of the healing art, but, as they are subject to no legal requirements, anyone who wishes may call himself a physician and practice as he pleases. A common method of treatment is to puncture the body with needles. According to the "Golden Mirror," as the official textbook is called, life is but a balancing of powerful principles. As long as these principles are properly balanced, health is maintained, but once their equilibrium is disturbed, disease is certain to result. By puncturing the body with a needle at the proper point, according to this theory, the balance of principles can be maintained. The student of acupuncture must learn the proper place to insert the needle for each of the various diseases.

Unless the native physician can have access to laboratories and operating rooms, unless he can maintain professional and personal relations with competent and high-minded colleagues, unless he can count upon a certain confidence in Western methods on the part of his fellow countrymen, a scientific medical course has slight chance of permanent and worthy success in China. Conservatism, faith in native medicine, family demands for quick commercial returns, absence of publicly enforced standards, temptation to compromise and quackery beset the path of the Chinese doctor who undertakes to practice scientific medicine in his native land.

Rockefeller Foundation, September 18, 1921.

"The spirit of the medical and surgical generosity is the wonder of the world both in what it has done and what it is helping to do."—*Bucks County Medical Monthly.*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

STATE MEDICINE

That socialization of medical practice is not a dead issue, is emphasized by the frequent appearance of discussions of the subject in various publications. We take pleasure in printing in this issue an editorial from one of the leading daily papers of Pittsburgh, *The Pittsburgh Sun*, under the title "State Health Insurance"; also an editorial from a recent issue of Henry Ford's weekly, *The Dearborn Independent*, under the title "State Medicine." The writer of the first mentioned editorial justly lauds the social progress represented in the Workmen's Compensation law of to-day.

We like to feel sure, however, that all who praise Workmen's Compensation Insurance, while discussing compulsory health insurance, realize that the two forms of insurance have nothing in common. We want them to know that the form of insurance they praise holds industry responsible only for injuries received by employees while at work, and that all proposed plans for compulsory health insurance purpose to make industry responsible for sick employees, disregarding the cause of said sickness, whether it be botulism from eating ripe olives at a picnic, or lead poisoning contracted through years of faithful service. We unreservedly favor workmen's sickness insurance for sickness directly due to any given industry; but we are, at the same time, unqualifiedly opposed to forcing consumers and taxpayers to finance medical attention and sick benefits for industrial employees in any but industrial diseases. It goes without saying that the increase in cost of production occasioned by the adoption of compulsory health insurance for employees and their families will be instantly passed on to the consumer, just as the cost for creating and maintaining the new State Bureau with hundreds of employees will be passed on to the taxpayer. If the state is to direct medical attention and sick benefits, the state must not in so doing create or recognize classes, but should offer such benefits to employee and employer alike, as well as to those not employed.

We like the following from the editorial referred to on State Medicine:

"The public has had a wide experience in going to its officials for sufficient water, heat, light, school facilities, transportation service, and sufficient difficulty in getting any kind of service at all at any reasonable tax rate to prevent its falling in love with the idea of going to its officials for medicine when it is sick. Practically, it will not work; the genius of the American people is against it. Between family physicians and families there is a confidential relation which rests on choice and experience. It is not official."

We as physicians, having made a study of this paritcular European paternalistic propaganda, must unwaveringly continue our educational campaign, pointing out to our fellow citizens the menace of any form of legislation that does not consider the health of *all* the people of this commonwealth. We must also continue our support of State Medicine, so far as it prevents sickness through the control of communicable diseases, the control of water and food supplies and sewage disposal, leaving the treatment of sickness to the individual physician.

"STATE HEALTH INSURANCE

"The chairman of the Pennsylvania Health Insurance Commission, after an inquiry into the operation of the British health insurance act, has reported to his colleagues that the English plan should be used as 'the basis for wiser measures designed specifically to meet American conditions and needs.' He declares that the British act 'has unquestionably leveled up the standard of medical service and has given impetus to a better administered public health program. For America, it is concluded, workmen's health insurance should provide "medical and institutional service freely available for all employed persons and for their families, with cash benefits for physically incapacitated workers out of a fund created by joint contributions.'

"Coming with the endorsement of William Draper Lewis, a member of the commission, as 'the one piece of work done by the commission which is of enduring value,' the report may be expected to precipitate a new and hectic discussion of this disputatious question.

"Its opponents will not be passive. They have fought vigorously heretofore and may be expected to continue to set forth their arguments forcefully. The public health legislation committee of the Allegheny County Medical Society has met health insurance champions point for point, theory for theory, and fact for fact. Previously it has assailed this as 'the most radical scheme for social legislation yet presented in this country,' and 'a type of paternalism' inconsistent with American principle and practice. Opponents of health insurance have urged that it is against the best interests of employer, employee and taxpayer.

"State health insurance advocates may find a rougher path to tread in Pennsylvania than in many of our newer commonwealths. As Mr. John S. Fisher pointed out in his brilliant contribution to 'The Pennsylvania Papers,' from the foundation of our colonial government our people have been loath to delegate to the state the care of the needy and the unfortunate. After reviewing the migration here of the Quakers, and after them 'the Lutherans, the German Reformed, the Moravians, the Dunkers, the Mennonites, the Presbyterians, the Catholics, the Methodists, the Baptists, the Anglicans, the Jews and various other sects,' Mr Fisher sets forth this basic conception with clarity:

> "However these early settlers might differ in their religious convictions, the various sects and denominations all believed it was their pious duty to provide for the support of their poor and the education of their young. While they were willing to extend their benefactions to those outside their particular fold, they held it a matter of reproach that any of their number should become a charge on others. So it was the custom with our original population to treat charities as a matter within the province of the church rather than of the state. This practice has persisted throughout our history and has strongly affected the treatment of the problem by the commonwealth.

"Enactment of the Workmen's Compensation Law was a long step from our inherited precedent. It is now generally agreed that this has been a step forward. Is compulsory health insurance a step too far? That is a question that the people themselves will probably have opportunity to answer, but not before debate has been long and conclusive. Pennsylvania is ready to be guided by experience, but is seldom eager to experiment."—*From The Pittsburgh Sun.*

"STATE MEDICINE

"State ownership and control is perfectly sound in theory, and has proved itself wholly unsound in practice. There may be countries in the world where it is safe to trust the control of vital interests to the group of men who comprise the government; it has not always been safe in this country, as years of experience prove. The revelations of official incompetency, and not so much incompetency as dishonesty, during the recent war period, will effectually modify any theoretical appeal which the idea of state control may have.

"But that there are influences in this country which are bent on bringing all the people's affairs under official scrutiny, is most apparent from the efforts now being made to create a sentiment in favor of 'state medicine.' This means simply: more jobs, no privacy, curtailment of freedom, the destruction of the medical profession by the discouragement of research work, and the coarsening of delicate intimacies. It means practically that what the United States Shipping Board did to the shipping situation of the country, 'state medicine' would be permitted to do to the people's health.

"The most astonishing feature of this propaganda is the assumption that the proposal *could* be made attractive to the American people. Most cities have city physicians now, and most counties have county physicians, and no one rests under any doubt of the quality of the services rendered. The public has had a wide experience in going to its officials for sufficient water, heat, light, school facilities, transportation service, and sufficient difficulty in getting any kind of service at all at any reasonable tax rate, to prevent its falling in love with the idea of going to its officials for medicine when it is sick. Practically, it will not work; the genius of the American people is against it.

"Between family physicians and families there is a confidential relation which rests on choice and experience. It is not official. It is not altogether professional. It partakes of the confessional in large degree, and constitutes a friendly pact based on the experience of many fights with disease and death. So well recognized is this that the family physician has become a fixed figure in our lives, and with results of undoubted good, as the records generally show.

"To change all this and establish a police health station, as it were, at which citizens must apply for medical aid and await the pleasure of an official doctor who is paid anyway and whose professional career does not depend on the confidence he is able to evoke by skilled and loyal service, is to suggest something which is so alien to our Americanism as almost to prove an alien course and an alien purpose.

"With the growing predilection of a certain group for medicine and surgery, and with that group's constant predilection for securing control of the intimate sources of the people's confidence and strength, there is no doubt whatever as to what complexion 'state medicine' would take if it were adopted.

"These are times when more than at any previous period the American people must be on guard against *ideas* that are not American. The time has come for the exercise of a wholesome defensive suspicion about many things that outwardly are made to appear desirable, but inwardly conceal dangers to our fundamental traditions and liberty. And we are never more justified in our suspicions of alien influences for an alien purpose than when we see attempts made to 'regiment' the American people or their private affairs."—*From The Dearborn Independent.*

NINETEEN TWENTY-ONE—NINETEEN TWENTY-TWO

The month of October should be featured in all county medical society meetings by expressions from all members of good intentions toward future scientific meetings. The secretaries of many such societies having just returned from the Secretaries' Conference in Philadelphia and its timely discussions on topics dealing with increase of membership and increase of attendance upon and interest in scientific meetings, should be the source of inspiration to other officers and members. The rank and file of such societies should attend so faithfully upon scientific meetings and discussions, that non-attendance will carry with it the earmarks of *cephaledema* or *cerebroscelerosis.* There are undoubtedly certain communities in Pennsylvania where the laity are so thoroughly accustomed to noting the attendance of up-to-date physicians upon medical meetings, that by contrast, the non-attenders are placed in an unfavorable light. The problem is one that may be solved only by close coöperation between energetic officers and faithful members.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to September 15:

Armstrong: *New Member*—Hugh I. Stitt, Kittanning.

Cambria: *New Member*—Samuel D. Boucher, Portage. *Reinstated Members*—John A. Murray, Valesius A. Murray, Patton; Arthur H. McAnulty, Nanty-Glo; Robert M. Palmer, 344 Lincoln St., Johnstown.

Clearfield: *New Members*—Wallace S. Bryan, Box 141, Ramey; William D. Hyskell, Madera; James B. Rucker, Clearfield Hospital, Clearfield.

Chester: *Reinstated Member*—I. Pemberton P. Hollingsworth, 7008 Green St., Gnt., Philadelphia.

Delaware: *Death*—Hiram M. Hiller (Univ. of Penna., '89), of Bellefonte, formerly of Chester, following a stroke, Aug. 7, aged 54.

Huntingdon: *New Members*—William A. Doebele, 528 Penn St., Huntingdon; Herbert J. Bryson, Cassville. *Removal*—John M. Keichline from Petersburg to 820 Fifth St., Huntingdon.

Jefferson: *Reinstated Members*—Harry B. King, Reynoldsville; John M. Kuhns, Ramsaytown.

Lackawanna: *Death*—Samuel P. Longstreet (N. Y. Univ. Med. Coll., '86), of Scranton, Aug. 16, aged 55.

Lycoming: *New Members*—James H. Burrows, 531 W. Third St., Williamsport; James C. Reed, Milton.

Mercer: *New Member*—Gail W. Kahle, Hadley.

Mifflin: *Reinstated Member*—William M. Baker, Lewistown.

Northampton: *Reinstated Member*—Arno R. Zack, 904 N. Main St., Bethlehem.

Philadelphia: *New Members*—Ellis M. Spoont, 2445 S. Sixth St.; Wayne T. Killian, 4501 Spruce St.; Arthur D. Waltz, 3601 Walnut St., Philadelphia. *Deaths*—Mary E. Shepherd (Temple Univ., '06), of Philadelphia, Feb. 19, aged 52; Matthew H. Cryer (Univ. of Penna., '77), of Lansdowne, Aug. 12, aged 81.

Somerset: *Reinstated Member*—Herbert P. Meyers, Confluence.

Westmoreland: *Reinstated Members*—Charles D. Ambrose, Ligonier; Morgan J. Cramer, Monessen.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of *per capita* assessment has been received since August 13. Figures in first column indicate county society numbers; second column, State Society numbers:

Aug. 19	Philadelphia	2036–2037	7222–7223	$10.00
22	Westmoreland	150	7227	5.00
23	Somerset	45	7228	5.00
29	Westmoreland	151	7232	5.00
Sept. 3	Jefferson	48–49	7233–7234	10.00
6	Philadelphia	2041	7235	5.00
	Cambria	121–124	7236–7239	20.00
9	Northampton	132	7241	5.00
13	Mifflin	27	7244	5.00
14	Chester	78	7245	5.00

The following has been received from *new* members since August 13:

Aug. 17	Huntingdon	37–38	7220–7221	$5.00
19	Philadelphia	2038–2040	7224–7226	7.50
23	Clearfield	62–64	7229–7231	7.50
Sept. 8	Cambria	125	7240	2.50
9	Armstrong	61	7242	2.50
10	Mercer	76	7243	2.50
14	Lycoming	106–107	7246–7247	5.00

I am an old man and have had lots of troubles—but most of them never happened.—*Franklin.*

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg, Pa.

THE PHILADELPHIA SESSION

Hel-lo, Doctor! Glad to see you! How's everything down your way?

One after another they gathered in, happily greeting old friends and meeting new ones, for this is one of the best of the features of the State Society meeting—this gathering together of kindred spirits to exchange experiences and to learn each other's point of view.

The scientific program was all that could be desired, many of the most eminent men of the country taking part, as well as many others whose names may not be so prominently identified with medical literature, but whose opinions, based on experiences gathered from many and varied medical activities, are important in moulding the medical science and ideals of the future. We will not go into details in regard to any of the splendid papers read and addresses delivered, for these will all appear in due time in the pages of the Journal, but we will say that those who could have attended and did not, missed a treat, and those who were unable to attend should make an effort to be with us at Scranton next year.

The Associate Editorial staff of the Journal was especially honored this year by the selection of Dr. Lawrence Litchfield, of Pittsburgh, as President-Elect. Dr. Litchfield needs no introduction to the medical profession of this state, as he is a man who has stood for the highest ideals in medicine these many years, and general satisfaction is expressed at his selection. Dr. Litchfield has been one of the pillars of Allegheny County Medical Society and, during the past year, as Associate Editor of the Pennsylvania Medical Journal, he has assisted in many ways, through editorials and otherwise, toward making the Journal pages of value to its readers. The list of the other officers will be found on advertising page vi of this Journal.

The exhibit was one of the most successful ever conducted by the Society. There were 63 exhibitors, representing every phase of medical development. The corridors and two of the large rooms on the first floor of the Bellevue-Stratford were lined with eighty-three booths, and the products presented included the very latest books, surgical instruments, electrical apparatus, pharmaceuticals, ophthalmological equipment, and in fact everything the most progressive physician could desire. These exhibits were a liberal education in up-to-date methods and the management heard praise on every side of the excellent products presented and of the courtesy and enterprise of the sixty-three exhibitors.

The social side of the session was a delightful one. First on the program was a visit to the Mulford Vaccine Farms at Glenolden. About a hundred and twenty took the trip through the laboratories, where attendants demonstrated the methods of preparing their vaccines and serums. The itinerary consisted of a trip through the plant where glass syringes and containers are prepared; a parade of horses, from which the serums are obtained; a visit to the animal house which contains hundreds of guinea pigs, rats and other animals used for experimental purposes, after which tea was served. The hospitality of this firm was much appreciated, not only by the guests, but also by the Entertainment Committee of the local Society.

On Tuesday evening the gentlemen were pleasantly entertained by the Philadelphia County Society at a smoker and vaudeville. The eleven acts and two moving picture reels were especially adapted to the appreciation of physicians. A supper followed, at which the *piéce de résistance* was lobster served in a delectable way by the efficient staff of the Bellevue-Stratford.

While the members of the Society were discussing scientific subjects on Wednesday, the ladies were taken to one of the points of interest—the Philadelphia Navy Yard. About two hundred and fifty of them were conveyed to the Yard in automobiles, where they were met by the Officer of the Day who, with his aid de camps, escorted them through the various buildings and the aërial section, where they saw the largest seaplane that has ever been built. After this inspection tour the members of the party were the guests of the Navy Yard at a delightful luncheon.

Many guests in gala attire greeted the outgoing President, the incoming President, the President-Elect and their ladies at the delightful reception and dance given in the ball room of the Bellevue-Stratford on Wednesday evening. The music was entrancing and the dancing was enjoyed by all—even those who participated only as spectators. Punch without any "punch" was served and enjoyed by all the thirsty.

The visiting ladies were entertained on Thursday afternoon by an illustrated lecture, given in the amphitheatre of the Jefferson Medical College by Dr. John J. Macfarlane, who chose the interesting subject of Historic Philadelphia. Following this discourse many of the spots shown on the screen were visited by the guests, who were taken in sight-seeing automobiles.

The session was closed on Thursday evening with a lecture given by Dr. Haven Emerson on "The Care of the Disabled Ex-Service Man." The subject was further discussed by William J. Bott, District Medical Officer, U. S. Veterans' Bureau, by Dr. Alfred Ostheimer, in charge of the neuropsychiatric work in the Third District, and by Dr. Daniel M. Hoyt, in charge of the work on Respiratory Diseases in the same District.

The registration slightly exceeded 1,500.

The splendid coöperation offered by the Philadelphia County Society throughout the entire session was notable, and without their assistance the Society would have been unable to make the Philadelphia Session the success it was. The enthusiasm aroused by the scientific program, as well as the commercial exhibit, sets a standard that will be hard to improve on, or possibly to equal in some years. It does, however, offer the opportunity to stimulate the county societies which may be the hosts of the future to welcome and entertain the visiting members of so great a society as that which bears the name of the Medical Society of the State of Pennsylvania.

NUTRITIONAL WORK IN PUBLIC SCHOOLS

Katharine B. Rich, Chicago (*Journal A. M. A.*, April 9, 1921) is convinced that it is entirely possible to carry on nutritional work in the public schools without rest periods or free milk, and obtain appreciable gains in weight and height. It is also possible to place the responsibility for their gains on the children, to their great advantage and with a saving of the nutritional worker's time. It can be done without seriously interfering with studies or classes, and both mental and physical gains more than compensate for the small amount of time lost. One efficient nutritional worker can, at a minimum, teach and care for, and do clerical work necessary for 400 children each week. (This is allowing for less than thirty children to a class, and a well-trained worker can easily handle thirty-five.) It is not an expensive per capita proposition handled along the lines of instruction as outlined. The percentage of gains can be greatly increased over what we have obtained if all-time workers are employed, and if the work has the unqualified backing and support of the school authorities, thus dignifying it as being part of the regular school program.

UNIFICATION OF FEDERAL HEALTH WORK

"Lest we forget," and simply as a reminder, we reproduce a plank in the platform of the Republican party, as adopted last June:

"The public health activities of the Federal government are scattered through numerous departments and bureaus, resulting in inefficiency, duplication and extravagance. We advocate a greater centralization of the Federal functions, and in addition urge the better coördination of the work of the Federal, state and local health agencies."

It is hoped that the party now in power will not forget an important plank of the platform on which it rolled into power.—*Jour A. M. A.*, March 12, 1921.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—Henry Stewart, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—John W. Bancroft, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—J. Hayes Woolridge, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. J. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederck R. Bausch, M.D., Allentown.
Luzerne—Walter L. Lynn, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Fred Wade Paton, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—O. M. Weaver, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—W. Gilbert Tillman, M.D., Easton.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—John J. Repp, M.D., Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percy E. Whiffen, M.D., McClure.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Martin E. Herrmann, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Homer P. Prowitt, M.D., Washington.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—J. F. Trimble, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

October, 1921

COUNTY SOCIETY REPORTS

CUMBERLAND VALLEY MEDICAL ASSOCIATION—SEPTEMBER

The nineteenth annual meeting of the Cumberland Valley Medical Association was held in Waynesboro, on September 8, 1921. The business and scientific session was held in the Y. M. C. A. rooms, and the meeting was called to order by Peregrine Wroth, Jr., M.D., of Hagerstown, Md.

The president-elect, J. Burns Amberson, M.D., Waynesboro, was installed. He delivered the president's annual address, taking as his subject, "The Promised Land for Medicine." The thoughts or points in the address were well taken and were expressed in pleasant and forceful style. The reader showed plainly that the general practitioner or family physician will again come to the front as the important man in the medical field, and will be the first to be depended upon in the treatment of illness.

After some routine business the address of the day was given.

Thomas B. Futcher, M.D., Baltimore, Md., talked on the "Etiology and Treatment of Nephritis." The subject was well covered and of great value to those who had the privilege of hearing the address. One point especially emphasized in treatment, especially in the acute case, is to put your patient to bed and keep him there for three months, at least.

Following the meeting the members, their wives and guests went by trolley to Pen-Mar Park, where a generous dinner was enjoyed.

The following officers were named for the year 1922: President, Wm. D. Campbell, M.D., Hagerstown, Md.; vice-president, W. A. Gordon, M.D., Hagerstown, Md., Leroy H. Saxe, Fannettsburg, Pa., S. Dana Sutliff, Shippensburg, Pa.; secretary, John J. Coffman, M.D., Scotland, Pa.; assistant secretaries, Warren D. Miller, M.D., Hagerstown, Md., Frank N. Emmert, M.D., Chambersburg, Pa., C. R. Rickenbaugh, M.D., Carlisle, Pa.; treasurer, John C. Gilland, M.D., Greencastle, Pa. The committees are to be named by the president-elect. The next meeting is to be held in Washington Co., Md. J. J. Coffman, Reporter.

FOURTH CENSORIAL DISTRICT—AUGUST

The eighteenth annual meeting of the Fourth Censorial District of the Medical Society of the State of Pennsylvania was held at the Harrisburg Colonial Country Club, August 25, 1921.

At the usual business meeting the different counties reported on the meetings held during the past year and the officers for the next meeting were elected. Dr. C. R. Farmer was elected president; Dr. W. N. Keylor, vice-president, and Dr. T. C. Shookers, secretary. The prevention of the spread of typhoid fever, particularly pertaining to dairy farms was discussed by Dr. Hartman.

A special feature at this meeting was the presence of the ladies. Everyone was well pleased and it is to be hoped that this will become an established custom in the years to come.

The day was spent in playing golf, tennis and bowling, and everyone had a fine time. At four-thirty a very excellent dinner was served by Mr. Holland, caterer for the Club. Jesse L. Lenker.

ELK—SEPTEMBER

Through the courtesy of Mr. Bruce G. Kime the Ridgway Medical Society entertained the County Society at the Highland Club House, September 8th. After a nice chicken and corn dinner with the necessary trimmings, the regular meeting opened. Dr. W. C. Shaw read a paper on Acute Osteomyelitis, emphasizing especially the necessity of early diagnosis and prompt interference and touching on the high spots in diagnosis. These acute cases come first to the family doctor, and if he knows enough to wash his hands clean, boil a gimlet, scalpel, a couple of artery forceps, rubber drainage, and sterile dressings, he can save his patients life, at least shorten his convalescence, and give him a better functionally useful member. Dr. Shaw's paper was rather unique, in that usually those who have the surgical bee buzzing in their bonnet are prone to say "bring all suspected cases to the surgeon," and he was advocating a measure that any one might institute. It is better to drill two or three holes unnecessarily than to run the risk of losing your patient or having him live with marked deformity and lessened usefulness.

Dr. Evan O'Neil Kane of Kane was present, and said it was rare for the surgeon to see an acute osteomyelitis, that when he saw these cases they had usually passed beyond the stage when simple drilling might be all that was needed. Dr. Benson gave a talk explaining why the x-ray furnished no definite data in acute cases. The reporter then read a paper abstract of which follows:

ACUTE INTESTINAL OBSTRUCTION

S. G. Logan, M.D.

It is not my intention to try to cover completely the subject of intestinal obstruction. If I am able to help you refresh your minds as well as my own I shall have accomplished my object. Much of the subject-matter is taken from a most excellent paper by Dr. Finney, in the May, 1921, number of the Journal of S. G. and O., also from a paper by Dr. Harvey Stone in the same issue. About the time these two articles reached our hands, there were in the Elk County General Hospital two very interesting cases of intestinal obstruction. In the management of these two cases we employed a procedure, for which we claim no particular originality, except in one detail. At this time we are not able to state precisely how the idea originated, except that it was a sort of combination idea. Dr. Shaw asked me to wash out a man's stomach previous to operation for intestinal obstruction. He was then having feculent vomiting and was visably a very sick man. The tube was kept down during his operation and for some time afterwards, and we think its presence did much to add to his comfort, and gave him a better chance to recover. The fact that he subsequently died does not destroy our faith in continuous lavage of the stomach and duodenum, and as it is a comparatively simple procedure, the apparatus being small and not expensive, we submit the idea to you for your consideration. There are a number of circumstances that might arise in any intestinal case out in the country. The diagnosis is by no means a simple one.

It seems to be the consensus of opinion that the cause of death in these cases is not the obstruction as such, not the dead gut, but from the highly toxic contents of the intestine above the dead, paralyzed or strangulated section. The principle object of the operator is not merely to relieve the obstruction, but to empty the bowel of this highly toxic material as soon as possible. It makes no difference what our idea may be as to the nature of this material, whether it is due to bacteria or split protein, the thing to do is to get rid of it at once. Dr. MacKinnon, of Lincoln, Neb., in the issue of July 23d, J. A. M. A., describes a method of providing drainage under local anesthesia, in these desperately sick cases. The more you can drain out through a duodenal tube, the less there is to be drained when the belly is opened, and the less there is for the patient to absorb, to say nothing of the comfort of the patient. You not only help keep them comfortable but, by leaving the tube in place, even though it is only in the stomach, you can add some to the prognosis, for the death rate is high.

Your patient has a better chance if operated upon early, even by a poor operator than he has if operated late by one more skilful. Time is the important element in these cases. Cases operated within the first twelve hours have a death rate of 5 per cent, within the second twelve hours the rate jumps to 11 per cent and in the second twenty-four hours it jumps to 31 per cent. Do not think that this is a comparatively rare condition, or that it occurs only in the other fellow's practice. It is true that about 40 per cent of these cases have had a previous operation at some time. That leaves about 60 per cent to occur spontaneously. Acute strangulation is the cause of one-third of the cases of acute intestinal obstruction.

It would perhaps not be amiss to look into the diagnosis a little. There is one very consoling thing about cases of this type: while we may not be able to determine definitely just what is wrong, we can at least tell that it is a belly that needs to be opened. By acute intestinal obstruction we mean a sudden stoppage of the intestinal contents. This may be due to mechanical causes or loss of motor power in the intestinal wall. Any part of the intestinal tract may be obstructed, and it may be acute, subacute or chronic, may be complete or partial or due to a number of causes—intussusception, volvulus, foreign bodies, enterolith intestinal parasites, bands, adhesions, kinks, twists, post operative or not, paralysis, tumors, congenital defects, as Meckel's diverticulum or megacolon, internal strangulations (the hernias) and messenteric vascular oclusion, thrombosis, embolism or infarction, call it what you will. We are all more or less on the lookout for strangulation in the usual hernial sites. Let us not overlook the number of places where we might have an internal hernia, such as the duodenojejunal fossa of Treitz, where the jejunum passes through the transverse mesocolon, in the foramen of Winslow, in the ilio-appendicular recess, in the retrocecal recess, and in the diaphragm. Another cause of dynamic ileus, or paralysis that I think we may overlook is contusion or inflammation of the testes. With such a variety of places, it is not to be wondered at that the precise cause is to a large extent conjectural.

The most important and common symptoms are pain, vomiting, and more or less absolute constipation. There are other abdominal conditions with this onset, so we must look for something further. The pain of obstruction may be sudden or gradual in onset, but regardless of that it never entirely stops, and while it is paroxysmal, there is never complete remission. The vomitus consists first of the contents of the stomach, and duodenum, later becoming feculent. Constipation is usually present, though you may get a history of one or two movements of the bowels following the pain and vomiting, followed by absolute constipation, neither feces or gas being passed per anus, while gas collects from below upwards causing a great increase in the intra-abdominal pressure. The most helpful thing is the degree of shock from which the patient may be suffering, indicated by anxious expression, Hippocratic in other words, rapid thready pulse, cold clamy skin, thirst, air hunger, etc., and while we can not measure the amount of pain the other fellow is having, we can feel quite sure that the patient is really sick. On inspection, the abdomen contours of intestinal loops may be visible as a pattern under the rigid abdominal wall. The breathing is rapid and shallow. The tenderness is largely dependent upon the character and location of the obstruction, and is therefore only exceptionally a marked feature. The urine contains large amounts of indican. The amount of distension is dependent on the location of the obstruction and the interval that has elapsed since the onset and the time you see the case.

We think the continuous use of the duodenal tube, before and after operation will add much to your patient's chances of recovery. At least it will do no harm, aside from the slight annoyance of the tube in the mouth. Our experience has been too limited to say much more than to suggest it to you, but it appeals to us as a rational procedure.

S. G. Logan, *Reporter.*

JEFFERSON—AUGUST

The monthly meeting of the Jefferson County Medical Society was held August 11th in the Y. M. C. A. building at Punxsutawney, with a good attendance. Dr. Davenport, of Dubois, the president, presided, and Dr. Mills, of Eleanor, was in the secretary's chair.

Dr. F. D. Pringle, of Punxsutawney, was elected delegate to the Pennsylvania State Medical Convention to be held in Philadelphia next October, and Dr. J. H. Murray was chosen as alternate. Dr. S. M. Free, of Dubois, was reëlected by acclaim to the office of district censor. A discussion was held concerning the annual picnic and it was finally decided that it should be held at Dubois, the Dubois contingent to make the arrangements and to set the date.

Following the business meeting, papers on "An Unusual Case of Paralysis" were read by Dr. B. A. Beale, Dr. J. E. Ginter, and Dr. C. W. Johnstone, all of Dubois. The subject of the papers, a patient of the Dubois Clinic, presented, on examination, septic tonsils and ethmoidal cells, a four plus Wassermann, and a paralysis of both legs, which was without pathological reflexes. The paralysis completely disappeared without treatment and was thought to be hysterical in nature. The discussion following was spirited and was devoted altogether to syphilis, its early detection, its symptoms, and its treatment.

The society was then given a treat. Under the title of "Innocents Abroad," Dr. S. M. Free gave a talk on his experiences and observations during his recent trip to Europe. Dr. Free was the delegate of the Dubois Rotary Club to the International Convention of Rotarians in Edinburgh, Scotland. Dr. Free carried his hearers to Scotland, England and finally to France and her battlefields.

The August meeting was the most instructive and entertaining the reporter has attended.

W. A. Hill, Reporter.

LANCASTER—SEPTEMBER

The regular meeting of the Lancaster City and County Medical Society was held in the rooms of the Medical Club, S. Prince Street, with President E. J. Stein in the chair and forty-five members present.

A letter from the Medical Legislative Conference asking for the nomination of men of known integrity at the primary election on September 20th was read by the secretary. A communication from the Committee for the Control of Cancer asking for the appointment of a local committee to aid in their work, resulted in the appointment by the chair of Drs. J. L. Atlee, J. B. Kennedy and C. R. Farmer.

The stated business of the meeting was a paper by Dr. T. G. Schnabel, Instructor in Medicine at the University of Pennsylvania, who chose as his subject "Therapeutics." For five years it has been known that quinine salts had a sedative action upon the heart and quinadine sulphate in auricular fibrillation acts very well indeed. Given in doses of six grains three times daily it will often result in a normal heart action in from one to three days. The drug should be given in gelatin coated capsules and it is imperative that the patient be "tried out" previous to the introduction of treatment to determine whether or not any idiosyncracy exists. The action of this salt is similar to digitalis in auricular fibrillation, in that it decreases the impulse from the auricle to the ventricle. While there are several groups of heart irregularities, as respiratory or juvenile arrhythmias, where deep breathing accentuates the condition, premature contraction arrhythmia, which usually disappears under exercise, heart block, when the pulse is under forty, paroxysmal tachycardia, pulsus alterans and auricular flutter and fibrillation; the quinine treatment is applicable only in the latter two conditions.

The status of thyroid disease was then taken up and the importance of basal metabolism in the study of these cases dwelt upon. The definition of basal metabolism was given as the amount of heat given off from the body in repose twelve hours after food had been taken. A normal metabolic rate has been figured out as a standard and from this the readings are taken. Hyperthyroid disease is always accompanied by an increased metabolic rate and, while a variation of 10 per cent is allowed, above 15 per cent is accepted as a definite increase in metabolism. With the indirect method, which the speaker described, it is very easy to determine the basal metabolism and these findings are valuable in determining the selection of operative risks in this type of case. A surgeon would be unwise to operate in the face of an increasing basal metabolism but would wait until it was in the decedency. He discussed the value of the x-ray in this type of case and noted the fact that the profession was not of one accord in this phase of treatment.

In so far as the sodium citrate method of blood transfusion was not without its evil effects in the large number of febrile reactions (30 per cent) he advocated and demonstrated Unger's direct method of transfusion. The indications for transfusion were then taken up.

The following discussed the paper: Drs. S. W. Miller, Frank Alleman, P. P. Breneman and E. J. Stein.

Walter D. Blankenship, Reporter.

MERCER—AUGUST-SEPTEMBER

The members of the Mercer County Medical Society and their families held their annual picnic at Stoneboro on Wednesday afternoon, August 24th. Many enjoyed bathing and boating before dinner, which was served at 6 p. m. on the porch of the dancing pavilion of the Lakeside Recreation Company. After dinner some of the party remained to dance. Several of our members were on vacations at this date; nevertheless there were seventy present. The vice-president, Dr. J. E. Ferringer, and his wife, of Stoneboro, with the aid of the other local doctors did much to add to the success of the outing.

The regular meeting of the society was held on the porch of the Kimberley Memorial Home for Nurses of Buhl Hospital, Sharon, at 1 p. m. on Thursday, September 8th. A business meeting was called by the president, Dr. A. M. O'Brien. Dr. Gail W. Kahle, of Hadley, was elected a member. The following committee was appointed to assist in the educational propaganda for the control of cancer: Drs. A. M. O'Brien, F. M. Bleakney, C. W. McElhaney and G. W. Kennedy. The members were urged to attend the meeting of the Medical Society of the State of Pennsylvania, which will convene at Philadelphia, October 3d-6th.

Dr. William H. Bunn, of Youngstown, Ohio, who has just returned from Scotland, where he was studying under Sir James MacKenzie, read an interesting paper on "The Review of British Methods of Diagnosis—Especially the Heart." This paper was discussed and enjoyed by those present.

Following the program, Miss Cumming, Superintendent of Buhl Hospital, served tea, sandwiches and cake. A rising vote of thanks was given Dr. Bunn for his excellent paper and Miss Cumming for her entertainment. Adjourned to meet in November.

Edith MacBride, M.D., Reporter.

NORTHAMPTON—SEPTEMBER

That increased interest is being shown in the workings of the Northampton County Medical Society was plainly demonstrated Friday, September 16th, when about seventy members gathered for the regular monthly meeting. Drs. Thomas Dietrick, of Easton, and James Conohan, of Bethlehem, were elected members.

A committee to represent the Northampton County Society and work in conjunction with the Cancer Commission was appointed by the president.

Dr. Charles B. Reynolds, of Philadelphia, read a very instructive paper on "Treatment of Obstetrical Problems Relative to Contracted Pelvis" which called forth an interesting discussion and was highly appreciated by the members present.

The prosecution of the Chiropractors, which has just come before our local courts, came up for discussion and the members were very much aggrieved to see the apparent lightness of the offense, scenting future trouble if we are not on our guard. A motion was made to instruct our delegates at the State Society meeting to bring the matter before that body, further adding they all should be willing to go down in their pockets for an assessment if necessary to protect ourselves against pernicious legislation.

Luncheon was served at the expense of the society and the meeting adjourned.

W. Gilbert Tillman, Reporter.

SUSQUEHANNA—AUGUST

The August meeting for the Susquehanna County Medical Society was held August the 9th at the Langford Hotel in Susquehanna. The attendance was very good and the meeting very instructive. The president, Dr. A. J. Denman, called the meeting to order at 1:00 p. m. and after the regular course of business several interesting cases were reported by Dr. W. J. Condon.

These consisted of a primary colon infection of the bladder; acute gangrenous appendicitis in a woman of 76, giving all the symptoms of intestinal obstruction; and a case of calculus in the right ureter, in a girl 12 years of age. A very interesting paper on business principles was read by Dr. D. J. Peck.

The society was honored by the presence of Dr. Donald Guthrie and Dr. Haynes, of Sayre. They discussed the above cases with much interest. Dr. Guthrie gave us an interesting talk outlining and emphasizing the necessity of physicians keeping accurate accounts and case records, outlining the principle of group medicine and emphasizing the value for all members of the profession in attendance at their county and state meetings.

Dr. John S. Niles, of Carbondale, extended an invitation for the society to attend a luncheon and clinic at the Emergency Hospital at Carbondale on August the 31st. The meeting was then adjourned subject to the call of the Executive Committee.

H. D. Washburn, Reporter.

YORK—AUGUST

On August 4th at 1 p. m. the regular meeting of the York County Medical Society was called to order by the president, Dr. L. S. Weaver, in the parlor of the Colonial Hotel.

It was announced that any person having information bearing on the malpractice of "Dad" Perry should place such information at the disposal of Attorney Robert Spangler at the earliest date.

Dr. Alleman, reporting for the Committee on Public Policy and Legislation, recommended that York County be divided into districts and that a member of the society in each of such districts be appointed to list all chiropractics, osteopaths, midwives, persons practicing without license and also physicians not members of the County Medical Society. The recommendation of the committee was followed.

Dr. Charles May read a very interesting paper on "Purpura Haemorrhagica." Among other things Dr. May cited a short series of cases seen in his practice in which both the time of onset of this disease and the close association of the cases pointed to a contagious cause. The paper was the subject of considerable discussion.

Owing to the State Meeting and the York County Fair, the regular meeting scheduled for October 6th was changed to October 13th.

The following paper, which was read by Dr. Williams at the February meeting and which was previously mentioned, is submitted here:

THE BASES OF SO-CALLED NEURASTHENIC STATES

Tom A. Williams, M.D., Washington, D. C.

The physician who understands the true meaning of diagnosis knows that merely to label a patient with the somewhat opprobrious term "neurasthenic" is by no means sufficient. He must first find the process in the patient's body or mind responsible for his symptoms. That the ways by which persons become neurasthenic are numerous may be shown by a brief mention of cases coming under attention, the majority of these cases manifesting the usual symptoms of exhaustion, inability to concentrate, lassitude, insomnia, and other typical sensations.

A man of forty-five, sent by his physician, too neuresthenic to go to business, had been adjudged agoraphobic, a correct designation; but examination showed that the agoraphobia had been reached through a process different from the more familiar ones caused by obsessions. His asthenia was based on an actual physical state, a depletion of the glandular secretions.

In another instance low blood-pressure or lack of adrenal output was found to be the cause; in another hyperproteosis with raised blood pressure; in another, that of a stenographer, a gnawing pain in neck and shoulders, hitherto unaccounted for, was found to rest upon so simple a matter as faulty posture at the key board: in still another case, gigraine headache had been entirely ignored as the genetic factor, but yielded readily to treatment. A woman of forty, having a severe pain in back and lower limb, was sent with a diagnosis which implied a psychoneurosis, that is, an unconscious defense in order to evade disagreeable work. There was found, however, a very definite radiculitis arising from an old infection. A young woman diagnosed as neurasthenic, and in this belief urged to continued exertion in spite of extreme asthenia, was shown upon examination to be suffering from brain tumor. A case of nocturnal incontinence, for which psychotherapy had failed proved to be in need of treatment for vagotonia. In each of these cases, sent to me as neurasthenic, and unsuccessfully treated with the usual tonics and rest cures, I found some physiological cause which responded quickly to the proper remedies.

In other cases the psychic factors were the all important. Social maladjustments proved to be the cause of a young woman's long-continued asthenia. An actor, unable to perform or remember his lines, supposedly because of a neurasthenic condition, was found to be suffering from a phobia induced by an unfavorable criticism. Jealousy was responsible for a similar condition in another. A young woman suffering for many years from an intense fear of being alone had spent four months with a psycho-analyst who tried, quite without success, to discover the "repression" or unfulfilled "wishes existing in the unconscious," which would account for her trouble. In reality she was suffering from a definite conscious fear based not on any repressions whatsoever. Only by dealing directly with the fear itself, by rational methods of persuasion, has her case been improved.

Other causes of a neurasthenic condition, are focal infection, latent tuberculosis, the less realized metabolic disturbances, perhaps hypovitaminosis, the mild cardiopathies, dispituitarism and other endocrinopathies, upon which I have scarcely touched. The milder cases of cyclothymia are often injudiciously treated with strychnine and other tonics, when opotherapy is needed. I should mention the false neurasthenics in which direct imagination is the causative agent as distinguished from the psychogenetic cases already cited, in which mental prepossessions, such as anxiety, hate, fear, etc., produce disadaptations.

A word should be said concerning the much cited garrulousness of neurasthenics commonly attributed to self-love. It is in fact, however, only the desire to understand and interpret discomforts with the very practical object of getting rid of them. A wise doctor will know how to curtail all but the essentials. In some so-called neurasthenics the chief complaint is of uneasy sensations in chest, abdomen or pelvis. These are often erroneously attributed to the imagination, the mechanism being supposedly a conversion or transference of mental distress to some region of the body. Between the emotional consequences of local uneasiness and the physical consequence of emotion the greatest expertness is required to differentiate.

It should be remembered too that the emotional drama itself is unimportant. To discover the actor who performs it, whether the heart, the thyroid gland, a microörganism or a *wrong way of thinking* is our chief concern. We must not forget, however, that the neurasthenic state is not always concurrent upon these conditions. In this as in other things the individual factor plays a part.

It may be seen even from this brief sketch that the physician's first duty is to discover which one of many causes may be the determinant in a given case, and it is to be hoped that the time is near at hand when the superficial and inadequate diagnosis of nerve exhaustion with its reprehensible title, neurasthenia, will be abandoned. Gibson Smith, M.D., Reporter.

STATE NEWS ITEMS

Dr. and Mrs. Jesse L. Wagnerr, Reading, are receiving congratulations upon the birth of a son.

Dr. E. J. Kane, of Portland, Oregon, visited his parents in Williamsport recently.

Dr. John Foster, of New Castle, has returned home after a trip of several weeks through the West.

Dr. Hollis G. Dean, of New Castle, has resumed his practice after taking a postgraduate course.

Dr. V. P. Chaapel, Williamsport, has returned from Rochester, Minnesota, where he was operated on by Dr. William J. Mayo.

Dr. F. C. Lechner, who has been an interne at the Williamsport Hospital during the past year, has located at Montoursville.

Dr. J. S. Hoffa, who has been located in South Williamsport for the past fifteen months, has returned to Benton, where he has resumed his former practice.

C. Lawrence Rebuck, Jr., son of Dr. and Mrs. Charles L. Rebuck, Harrisburg, has entered the University of Pennsylvania, Philadelphia.

Dr. J. W. Mann, of Philadelphia, who has charge of the Federal Veterans' Bureau at Williamsport, has moved his family to that city, where he expects to practice his profession.

Dr. Edward S. Vanderslice, of Philadelphia, died June 28, 1921, aged 78 years. Dr. Vanderslice was a graduate of the University of Pennsylvania School of Medicine, 1864.

Dr. J. Gibson Logue, Williamsport, who suffered a relapse following an attack of diphtheria, spent some time at Eagles Mere recuperating, and has now resumed his practice.

On October 4th the triangle of the Lincoln Highway between Harrisburg-Gettysburg-Chambersburg was formally opened, with a celebration at Caledonia Park. The highway is now without detour between Pittsburgh and Philadelphia.

According to a recent statement of the State Health Department, tuberculosis, being classed as a communicable disease, may legally be subject to quarantine when a patient fails or refuses to take the necessary precautions to protect others from infection.

Matthew H. Cryer, M.D., D.D.S., died August 12, 1921. Dr. Cryer was born in 1840, and graduated from the University of Pennsylvania in Medicine in 1877, and in Dentistry in 1881. He was a member of the Medical Society of the State of Pennsylvania and the Pathological Society of Philadelphia and a Fellow of the American Medical Association.

The Atlantic Coast Surgical Trade Association held an exhibit of new and modern instruments and specialties in the Bellevue-Stratford, Philadelphia, on September 29th and 30th. The exhibit was held for the benefit of the medical profession, and was supplemented with demonstrations designed to prove the advantages of the new over the old methods. Leading supply firms of the city were represented.

Simon Nicholas Andre, M.D., died Friday night, August 19, in the home of his mother, Mrs. Mary A. Andre, near Buena Vista, after several months' illness. Dr. Andre was born at Buena Vista January 6, 1868. He graduated from Witherspoon Institute, Butler, and Jefferson Medical College, Philadelphia, and practiced in Petrolia, for over 25 years. He was a member of the M. E. church and a trustee for a number of years; also a member of the I. O. O. F. Lodge of Karns City, Argyle Lodge 540, F. and A. M., Chicora, the Mystic Shrine, of Pittsburgh, and honorary member of the Petrolia W. C. T. U.

At the session of the Homeopathic Medical Society of Pennsylvania recently held at Bedford Springs, the following officers were elected: President, Dr. Clarence Bartlett, of Philadelphia; first vice-president, Dr. Horace E. Kistler, Johnstown; second vice-president, Dr. Margaret Hassler, Reading; secretary, Dr. U. M. Kenworthy, Philadelphia; treasurer, Dr. Ella D. Goff, Pittsburgh; necrologist, Dr. John C. McCauley, Beaverville; censors, Dr. R. T. White, Pittsburgh; Dr. H. F. Lane, Philadelphia, and Dr. W. Ray Moore, Beaversville; trustees, Dr. W. M. Hillegas, Philadelphia; Dr. George W. Hartman, Harrisburg, and Dr. John G. Wurtz, Pittsburgh.

Dr. Walter Estell Lee, Philadelphia, has been appointed by Governor Sproul to the Bureau of Medical Education and Licensure of the Department of Education. Dr. Lee succeeds Dr. John M. Baldy, who resigned to become Commissioner in the newly created Department of Public Welfare.

It was also announced that Dr. William M. Hillegas, also of Philadelphia, was reappointed by the governor as a member of the Bureau. His term expired September 1.

Doctor Lee served as lieutenant in the medical corps and was overseas for more than a year. He was transferred as major to the medical reserve corps after he returned to this country.

Doctor Lee was born in Philadelphia July 22, 1880, and was graduated from the School of Medicine of the University of Pennsylvania in 1902. He is a member of the county, state and national medical societies.

Dr. W. G. Gilmore died at his home in Emlenton, August 30, 1921, at 4 a.m., after an illness of a little over a month. He had been in his usual, though not rugged, health until the beginning of his illness, which began with a heat stroke suffered at Buffalo, N. Y.

Dr. Gilmore was born in Irwin Township, Venango County, 57 years ago. He began the practice of his profession at Clintonville, where he remained ten years, and removed to Emlenton seventeen years ago. He was actively interested in civic affairs and served one term as burgess of Emlenton. He is survived by his wife and several brothers and sisters. Dr. Gilmore will be missed greatly in the Society and in the vicinity where he has resided.

We are pleased to note that Dr. S. A. Slater, Superintendent and Medical Director of Southwestern Minnesota Sanatorium, and who was former member and Past President of the Venango County Medical Society, was honored by being elected President of Minnesota Tuberculosis Association.

The following clipping is from *Worthington Progressive* of August 11, 1921:

"A richly deserved honor was conferred upon Dr. S. A. Slater, Superintendent of Southwestern Minnesota Sanatorium, of this city, when the Minnesota Tuberculosis Association, meeting at Sauk Center last week, chose him as its president.

"Since coming to Minnesota and the institution here, Dr. Slater has not only earned an enviable reputation in the state and the Northwest as an authority on tuberculosis, but he has built up the sanatorium into a real power in this district, the largest in Minnesota. From the reopening of the institution in April, 1919, 129 patients have been admitted up to December 31, 1920, according to the first report submitted of the Slater régime. There remained in the institution 47 patients December 31, 1920, 82 having been discharged.

"There are now four persons on the resident staff. Besides Superintendent Slater, Dr. John Towey has been added as Assistant Superintendent, and Mrs. Gertrude M. Beilby, as Superintendent of Nursing and Housekeeping. J. M. Rice, bookkeeper and steward, is the veteran of the establishment, having been with the sanatorium since its formal opening in July, 1917. Every department of the institution makes a highly creditable showing and the report in every way reflects credit upon those in charge of the great antituberculosis plant."

Dr. John B. Carroll, of Hatboro, has associated with himself in the practice of medicine Captain John A. Logan, M.D., formerly of Pittsburgh.

GENERAL NEWS ITEMS

From November 11th to 24th the annual roll call of the American Red Cross will take place. Everyone is asked to coöperate to the end of making this the most successful ever held.

One Hundred Thousand Copies.—The January issue of the *Medical Review of Reviews* is to be sent as a New Year's gift to practically every physician in the United States and Canada. This issue will be one of the most valuable which has ever been prepared and we trust that the physicians who receive this number will read it with interest and profit.

Cancer Week.—The American Society for the Control of Cancer announces a seven days' campaign to be designated "Cancer Week," from October 30-November 5. The purpose of the movement is to reach as many persons as possible in the United States and Canada, with the vital message of Cancer Control. Committees have been established in all parts of these countries; lecture bureaus, made up of interesting and authoritative speakers, have been formed, and the campaign will be conducted by a well conceived plan.

Naturally the success of even so conservative a campaign depends largely upon the character and extent of the publicity given; while supplementary information from reliable sources by medical writers will be of the greatest value in creating interest and disseminating facts concerning cancer. The fullest coöperation of all is, therefore, requested.

There is probably no preventive medicine campaign of more vital importance to all classes of people, nor one which gives promise of greater interest or more hope. It is significant that the death rate from this disease has been arrested. Since 1916 it has remained practically stationary, with only minor fluctuations. This is the most encouraging thing which has happened since the Society was organized in 1913, and leads us to believe that united effort by all coöperating agencies will not only prevent a further increase in this rate, but will effect a continuous decrease.

Public Health Service Institutes.—In view of the great success of the Institute of the Public Health Service held in Washington last December and of the difficulty, due to the conflicting dates of other meetings, of arranging for another on the same scale this fall or winter the Service some time ago decided to try to meet the insistent nation-wide demand by arranging a series of institutes to be held in the larger widely scattered cities of the United States. Locations and dates were so arranged that at least two or three of the meetings should be held within reasonably convenient reach of nearly every resident of the country; and a tentative schedule of courses and of speakers was mapped out. The plans were promptly adopted by many cities, with some variations to meet special local needs.

Cities and dates so far listed are as follows: Hot Springs, Ark., some date in November; New Orleans, La., and Columbia, S. C., Jan. 9-14; Dallas, Tex., and Birmingham, Ala., Jan. 16-21; Memphis, Jan. 23-28; Louisville, Jan. 30-Feb. 4; Indianapolis, Feb. 13-18; Pittsburgh, Feb. 20-25; Cleveland, Feb. 27-March 4; Lansing, Mich., March 6-11; Chicago, March 13-18; Minneapolis, March 20-25; Portland, Ore., and Kansas City, Kan., April 10-15; Spokane, Wash., and Newark, N. J., April 17-22; Helena, Mont., and Albany, N. Y., April 24-29; Denver, May 1-6; Washington, D. C., in late May. Some dates in the schedule remain vacant, and these are being rapidly allotted.

The institutes were planned to run for a week; and this length has been almost universally adopted. The basic courses include from three to six lectures on tuberculosis, child hygiene, nutrition, clinics, and health centers, communicable diseases, non-communicable diseases, industrial hygiene, sanitary engineering, administrative problems, mental hygiene, medical social work, syphilis, gonorrhea, protective social work, and the delinquent. Single lectures will also be given on special occasions. Two institutes, those at Hot Springs and Chicago, will be devoted especially to venereal diseases.

The lecturers who will speak at some or all of the gatherings are the best available in their particular lines in the country. Among them are Frederick R. Green, John H. Stokes, A. J. McLaughlin, William C. White, Valeria Parker, W. F. Snow, W. A. Evans, and M. J. Rosenau.

Health Fortnight to Mark Semi-Centennial of American Public Health Association.—The fiftieth annual meeting of the American Public Health Association will be the occasion of a Health Fortnight. From November 8-19, New York City will be the scene of activities connected with this event, and the publicity with its slogan "Health First" will stimulate interest throughout the country.

Health Fortnight will include three major divisions: a Health Institute from November 8-11; a Health Exposition, November 14-19; the Fiftieth Annual Meeting of the American Public Health Association, November 14-19. Representatives from virtually every state in the Union and from many foreign countries will participate in the extensive program.

To focus the attention of the general public upon this celebration, November 13th will be observed as Health Sunday in many churches. Health Day will also be observed in the synagogues and in numerous business and social organizations. Speakers prepared to talk authoritatively on health topics will be furnished on request to any of these organizations. The New York County Chapter of the American Red Cross is coöperating with the general committee in the arrangement for this service.

The Public Health Exposition will undoubtedly make the widest appeal to the lay public. It will be the largest affair of its kind ever held in New York City. It will be conducted under the joint auspices of the Department of Health of the City of New York and the American Public Health Association. Already allotments of space indicate that at least two entire floors of the Grand Central Palace will be occupied by exhibitors. The exhibits will include those of educational and philanthropic organizations and those of commercial houses producing approved articles of health value.

Every legitimate means will be utilized to promote attendance at the exposition, for this will be the most effective way in which the message of Health Fortnight may be brought to the public. The fact that a similar health exposition held in Chicago a year ago drew an attendance of over one hundred thousand indicates the extent to which this form of popular education may be carried. Naturally, in New York with its larger population, a proportionately greater attendance is expected at the exposition. The profits from the sale of tickets, after the cost of the exposition and the convention are defrayed, will be devoted to establishing nutritional clinics for the benefit of undernourished children. In this connection, Dr. Royal S. Copeland, Health Commissioner of the City of New York, will present a series of educational exhibits in which instruction in the feeding of children will be featured. Dr. Copeland is chairman of the exposition; A. W. Hedrich, of the American Public Health Association, is secretary, and Dr. C. E. North, treasurer and general manager.

The Health Institute from November 8-11, will present to visitors to the convention an unusual opportunity to see the operations of established methods applied to various phases of public health work. About forty demonstrations have been planned. The thoroughness of the program may be gathered from the fact that the institute is sponsored by the American Public Health Association, the Health Department of the City of New York, the New York State Department of Health, the U. S. Public Health Service, the National Health Council, and the Committee of Public Health of the New York Academy of Medicine, with the coöperation of approximately one hundred other organizations. The chairman of the committee in charge is Dr. W. A. Evans. The director of the institute is Dr. D. B. Armstrong, of the National Health Council.

Following the week of the institute and the observance of Health Sunday, will come the opening of the scientific sessions, the meetings of the American Public Health Association in celebration of its semi-centennial. The sessions will begin on November 14th and the headquarters will be at the Hotel Astor, Broadway and 44th Street.

The scope of the meetings is indicated by their division into the following: General Sessions, Public Health Administration, Child Hygiene, Public Health Publicity and Education, Laboratory Section, Vital Statistics Section, Industrial Hygiene Section, and Food and Drug Sections. Speakers before these sections will include health workers of world-wide repute.

It is almost unprecedented to find an organization celebrating its semi-centennial, while its founder is on the verge of marking his own centennial. This is the case, however, with the American Public Health Association, for its founder, Dr. Stephen Smith, although in his 99th year, is still active and will participate in the meeting. A banquet will be held in Dr. Smith's honor as a part of the semi-centennial celebration.

As a permanent souvenir of the semi-centennial and as a record of the work accomplished, a Jubilee Historical Volume entitled, "Fifty Years of Public Health," will be ready for distribution during Health Fortnight. Although, as the title indicates, the book concentrates on progress made in the last half century, it also traces the public health movement from its early beginning. Further information regarding the Semi-Centennial may be obtained from the American Public Health Association, 370 Seventh Avenue, New York City.

BOOK REVIEW

HEART AFFECTIONS: THEIR RECOGNITION AND TREATMENT. By S. Calvin Smith, M.S., M.D. Published by F. A. Davis Company. Price $5.00.

Dr. S. Calvin Smith has recognized a need of what he terms a fundamental volume on the heart presenting in relatively small compass the basic principles of anatomy, physiology, pathology, diagnosis and treatment of heart affections. He deserves credit for his initiative and industry in his attempt to supply the practitioner with a working knowledge based upon the present conception of diseases of the heart. In *Heart Affections: Their Recognition and Treatment,* the author has faithfully striven to simplify the presentation of a somewhat difficult subject.

In a brief introduction, the author stresses the fundamental importance in prognosis and treatment of the correct conception of the functional capacity of the heart muscle. "It is the condition of the all *essential heart muscle* and not the presence of an incidental heart sound, which determines the cardiac efficiency of the individual." Chapters on anatomy and on physiology follow with a detailed description of the examination of the patient. The discussion of the physiology is well handled, if somewhat too didactically. The chapters on examination of the patient will, we believe, prove of definite value to the practitioner. The subject is, in the main, well presented.

Since brevity is stated as one of the guiding principles of the book, however, there may be a question as to whether the ordinary methods of physical examination described in every textbook on physical diagnosis should have been included in this volume. If a blank record form is to be included, moreover, there are undoubtedly others better adapted to civil practice than the author's figure 8, devised, as he says, as a result of military necessity and for use in training camp.

The chapters on graphic methods and the irregular pulse will no doubt prove useful to the beginner in cardiovascular work. The subjects are, in the main, simply and well presented. Errors appear, however, such as (page 57) that "sudden cutting in half of the pulse rate at radial by brachial pressure is a condition obtainable only in pulsus alternans." Since the recognition of pulsus alternans carries with it a prognosis of extreme gravity, it is important that this misstatement should be corrected. Other inaccuracies are fairly frequent; they will, however, probably be corrected in future editions of the book. Thus, we doubt whether the author has expressed his thought when he writes that "the detection of fine rales at the base of lung posteriorly, particularly at the base of the left lung, which rales are not associated with other evidence of respiratory involvement, is often an early and *always a valuable sign* of myocardial infection." (The italics are ours.) We cannot believe, furthermore, that on second thought he would state that the term *extra systole* is always "grossly incorrect," or that the terms *midclavicular* and *anterior axillary* line are "objectionable." It is well known that an interpolated and therefore true extra systole, may occur, and the imaginary lines which the author discards are used by many men expert in physical diagnosis. Dr. Smith's statement (page 75) that "pitch" is described by the adjectives "faint" and "loud" would doubtless have been corrected on more careful proof reading. So also would the dosage of "liquor trinitrini," given (page 349) as ten minims, although the author says in the same paragraph that it is the part of wisdom for the physician to begin with the usual dose of 1/100 of a grain of nitroglycerine, and that liquor trinitrini is a 1% solution of nitroglycerine. The section on strychnine should be rewritten. The conclusion of Parkinson and Rowlands, accepted by Cushney, is that all exact observations agree that strychnine has no beneficial action in heart disease; such exact observations have greater weight than the "fact" that strychnine has been successfully used for generations by physicians in the treatment of cardiovascular conditions.

The final paragraph of the book, Genuine Mental Atmospheres, should, for obvious reasons, be omitted. In support of this contention we quote the following: "There is something elusive in the patience, in the forbearance, in the glance, in the resignation—in the partial absolvence from temporal things—that suggests a touch of the supernatural in the actual cardiopath. It is the mental atmosphere of the heart patient that casts about him the aura of genuineness."

The publishers have coöperated in issuing a well printed book with admirable reproductions of the judiciously selected cuts. We believe that Dr. Smith's work may prove a useful addition to current medical literature, and that it will be widely read. J. D. H.

PRINCIPLES AND PRACTICE OF INFANT FEEDING. By Julius H. Hess, M.D., Professor of Pediatrics, University of Illinois College of Medicine. Second Edition. Published by F. A. Davis Co., Philadelphia.

Of the books on infant feeding so far published, Dr. Hess has given us one of the very best we have read.

He takes up with care the general consideration of the infant, breast feeding, artificial feeding, the care of premature infants and the nutritional disturbances of infancy. Especially to be mentioned is the chapter on the care and feeding of premature infants. In these pages Dr. Hess gives detailed advice as to the handling of these patients, and does it so well that we are constrained to say that in no other work which we have seen has this subject been dealt with so ably.

Throughout the book he emphasizes the value and the necessity of breast feeding. He shows how it may be carried out successfully, even under unfavorable conditions, when one might be tempted to resort to artificial feeding. The so-called "methods" of infant feeding are dealt with in detail. He makes it clear that in all the recognized procedures dealing with this perplexing subject, there are certain advantages and merit. One may use the percentage modification, the top-milk method or the plan of simple dilution with added carbohydrates. Success depends largely upon one's mastery of the method of his choice, and Dr. Hess describes carefully these various ways of adapting cow's milk to the needs of the individual infant.

An appendix of fifty pages covers such subjects as foods for older infants, baths, clothing, gastric lavage and gavage, weights, measurements and general hygenic measures. The entire work shows painstaking care, both as to the subjects and as to their presentation. Altogether we feel Dr. Hess is to be commended for giving us so readable a book, with such valuable material in so small a volume. *J.* E.

THE PRINCIPLES OF THERAPEUTICS. By Oliver T. Osborne, M.A., M.D., Professor of Therapeutics, Department of Medicine, Yale University. 1921. Philadelphia, Pa.: W. B. Saunders Company, Cloth, 881 pages.

A valuable book for the practitioner and advanced student and, while not going deeply into the materia medica section of the subject, it presents therapeutics in a most discriminating and analytical manner. Only drugs of defined activity are discussed, but there is no note of therapeutic nihilism.

The art of prescription writing is presented in strictly modern manner, disinfection, sterilization, and all other practical therapeutic measures employed in modern case-management are set forth in practical manner without pedantry or academic attitude.

Therapeutics is presented in sectional or group pathology, the talented author departing wholly from the classical arrangement of the subject and presenting it in the way most useful in bedside medicine. While chapters are devoted to certain important drugs or classes of drugs, the text is purely clinical, cutting away wholly from old moorings and methods of presentation.

A section of the work is devoted to the endocrine glands and organotherapy, and this, as well as the section on vaccines and serums, gives the clearest and most sane analysis of the subject recently appearing in print.

An extensive section is devoted to general physical measures and diet; it is admirably presented.

The author is fortunate in possessing a style marked by what is commonly called "punch" and his snappy points are so apt as to delight any experienced practitioner who has long felt there was a lot of flub-dub in therapeutics but who lacks the nerve to come right to the front and "say things" in the way this splendid book does.

There are, of course, some minor defects in the book, and many things with which some readers will disagree with the author; but it is a refreshing and stimulating text that should do a world of good and bring the author much commendation. T. S. B.

TUBERCULOSIS OF CHILDREN; ITS DIAGNOSIS AND TREATMENT. By Professor Dr. Hans Much, Director of the Department for the Science of Immunity and for the Research of Tuberculosis at the University of Hamburg, Germany. Translated by Dr. Max Rothschild, Medical Director of the California Sanatorium for the Treatment of Tuberculosis, San Francisco and Belmont, California. New York: The Macmillan Company, 1921. Pp. 156. Price $2.50.

The position held by the author of this little book entitles him to careful consideration on the part of a reviewer of his work, but also, confers upon the latter a right to expect something worth reading.

We believe that we have carried out our part of this principle with care, but find that the author has singularly failed in his. The writing is in a style of Prussian dogmatism that borders upon arrogance, and so abounds in doubtful statements as to cause the critical porcupine quills to bristle with the reading of almost every page.

One reads only to the bottom of the second page before he is startled to learn that Behring "experimentally changed spore-forming anthrax bacilli into those without spore-forming properties and weakened a most virulent type to such a degree that it became entirely non-virulent." Behring may have done this, but every well informed reader, professional as well as lay, knows that it was first done by Pasteur in his experiments upon the vaccination of animals against anthrax, and if there is any member of the medical profession who has forgotten it he ought to re-read "The Life of Pasteur," by Vallery-Radot, and revive in his memory the illuminating story of that scientific adventure.

On page six, we are told that "The virulence of the human type (of tubercle bacilli) can be increased to such a degree that it resembles the bovine form." "And conversely a bovine type of high virulence can be attenuated to such an extent that it exhibits only the characteristics of the human type." "Further we find human type cultures which are just as virulent for cattle, or even more so, than bacilli which have been directly cultivated from cattle." "And vice versa: so-called typical bovine tubercle bacilli, which have all of the characteristics of the bovine form, can become dangerous to human beings." "The possibility that man can become infected from cattle has been established beyond doubt." "The fundamental fact must be admitted that an absolute immunization against infection through the bovine type can be achieved with human bacilli."

Now it may be true that the virulence of some tubercle bacilli may be capable of modification, but it certainly is not true that it can be modified to any such extent as is here stated. Nor is it true that "absolute immunization against infection through the bovine type can be achieved with human tubercle bacilli." If that were only true, how long would it take to eradicate tuberculosis in cattle? Would not every government and every state and every health department and, indeed, every farmer be on the *qui vive* to have his cattle thus "absolutely immunized" for economical reasons if for no other?

What are we to think of such a statement as appears upon page 23: "Persons who have once become infected with tuberculosis are protected against the omnipresent tubercle bacillus; while persons who have not been infected in childhood, are not protected and succumb." "This definitely proves that association with tuberculosis produces immunity; where this association is lacking there is no protection."

The writing throughout is so sketchy, and the statements so ambiguous that it is not unlike certain trade publications. Indeed we had a suspicion that it might be such, and when we came to page 137, in which the treatment of tuberculosis through the administration of "partigens"—parti (al anti) gens—is under discussion, we found that we were right, as the recommended preparations in the approved dilutions are obtainable only from the commercial house of Kalle and Co., at Biebrich on the Rhine, Germany.

The recommendation of these "Partigens" and a too brief account of what they are and how they are made, is the only thing in the book that is new, and about them nothing is said to indicate that they are of value beyond the multitudinous other bacterial extracts, toxines, vaccines, tuberculins, antigens, etc., with which the literature is now burdened. J. McF.

A MATTER OF COMFORT AND HEALTH

The closing of a vast number of saloons by the operation of the eighteenth amendment has eliminated a large amount of drunkenness and crime, but with them there departed the more or less savory free lunch and the exceedingly convenient "comfort station." Americans who have seen such stations universally present in Europe in villages, towns and cities have wondered at their scarcity in this country. During recent years, however, there has developed a recognition of the need of "comfort stations," and they have been provided here and there; but they are by no means as universal as they should be. From a public health point of view the necessity for such facilities is well known. Practically, however, their provision is not so much a medical as a plumbing problem. *Domestic Engineering*, a periodical devoted to the plumbing trade, features the subject of "comfort stations" in its current issue. A survey has been made of the facilities for this purpose in 120 American cities. Forty-four per cent of these cities lack suitable facilities. Research has been made on cost of installation and operation, on various types of devices to be utilized, and on methods of conducting these stations. In many instances the old saloon "station" was a makeshift—insanitary, filthy, often obscene. The modern municipal comfort station is a clean, sanitary, commodious, even beautiful structure. Wisconsin, we are informed, has passed a state law, affecting more than 400 municipalities, making the provision of comfort stations compulsory. Physicians, knowing their importance, both for comfort and for health, will welcome progress of this character.—*Jour. A. M. A.*, April 23, 1921.

NEURASTHENIC PATIENT AND INTERNIST

The neurasthenic syndrome William J. Mallory, Washington, D. C. (*Journal A. M. A.*, March 19, 1921) says is a type of reaction which may modify and partly obscure the symptoms of serious physical or psychic disease. Congenital and acquired physical inferiority should be considered important predisposing causes. The immediate cause of such a reaction may be psychic or physical, or both combined. In treatment, physical deficiency and organic disease should be recognized, and relieved as far as possible in order to aid readjustment on the psychic level.

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ADDRESS

LABORATORY DIAGNOSIS*

H. G. SCHLEITER, M.D.
PITTSBURGH, PA.

I have the pleasure and honor of welcoming you to this, the Medical Section of the seventy-first annual session of the Pennsylvania State Medical Society. It has been gratifying to observe the increasing interest in this session from year to year since its inauguration, and I hope that this meeting will mark a further milestone in its progress, and that the discussions of the papers will be full and general.

I am taking the liberty of making a few very general remarks on a subject that is of constantly growing importance, namely laboratory diagnosis, and its relation to clinical diagnosis in private practice, for I am not touching on hospital research. There has never been a time when laboratory procedures have been so numerous and varied, and their results so useful as at present. Consequently their wide employment has become popularized, and very properly so. It should be emphasized, however, that the benefits they bring to the clinician, place upon him also the responsibility of using them with understanding and a proper sense of proportion. Whereas some years ago, insufficient attention was often given even to routine laboratory work, there is just now, I believe, a swinging of the pendulum the other way, and a tendency to overdo, that is, to lay insufficient stress on the observation and examination of the patient himself, and to order a number of investigations by the laboratory which may often be quite uncalled for, in the expectation that they will in some mysterious way whisper the correct diagnosis. This is unfair to the laboratory and tends to weaken the alertness of the physician. He, being in touch with the patient, is alone in a position to make a diagnosis. The laboratory may be of enormous aid to him, but it can not be expected to make his diagnosis for him.

Sir James Mackenzie touches on a point of real importance when he remarks that "while we may have a hundred new ways of investigating disease in the living, each of which adds to the sum of our knowledge, it must also be recognized that we have a hundred new ways of going astray" and that "in an attempt to be up-to-date, physicians use the methods of these auxiliary branches, so that clinical medicine toils laboriously in their rear, and to a great extent becomes subservient to them." We must never lose sight of the oft repeated fact that the patient must be studied as a whole—first of all, his symptoms, subjective and objective, his physical findings, and then the data obtained from the laboratory. No one of these elements predominates, all are links in a chain of evidence. The importance of one finding is modified by the character of the other findings, and the diagnosis is the resultant of a careful and intelligent analysis of the lot.

The clinicians of the past were chiefly dependent on what they could learn from the patient through the medium of their senses and their intelligence. The physician of to-day owes it to himself not to let his clinical perceptions grow dull, as in some instances they seem to threaten to do, because additional facilities are at his command, facilities which are intended to supplement his own efforts, not to supersede them. He owes it to himself also to have a clear understanding of the laboratory procedures that he calls to his aid—their principles, their sources of error, and when they are and when they are not applicable to a given case. Above all he should not accept reports as final in themselves. As already remarked, their importance is always modified by the other data present.

In some offices it occasionally happens that a new patient, before being seen by the doctor, is sent to the laboratory for, let us say, a routine urinalysis, blood count and Wassermann. Then on being admitted to the presence, he is found to have tonsillitis, and only then is a throat culture taken. So-called routine procedures can be abused. I feel that a physician should be prompt to obtain for his patient every aid that may in any way be of use to him, but he cannot properly do this until he has examined him, and he should not oblige his patient to pay for thoughtless routine under the delusion that he is receiving scientific care.

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*The Chairman's Address, delivered before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

I have known of physicians sending their patients to a laboratory with a request to examine "everything." One wonders whether they realize how large an order they are placing, and how useful the reports will prove, aside from convincing the patient that he is in the hands of the most up-to-date of physicians.

Lastly comes the question of the reliability of laboratory results. I do not see how such reports can be of any value unless the examinations are made by a skilled pathologist or under his direct supervision. If they are accepted from the hands of technicians, trained for a few months and then working independently with no one to check their results, there is a very real danger of harm to the patient, of injustice to competent laboratory workers, and of the discrediting of laboratory results. As for the physician willing to accept reports from such unsupervized technicians and acting on them, it seems a little like the halt leading the blind.

In conclusion, may I emphasize the following points as applied to private practice:

1. The basis of good clinical diagnosis is first of all thorough familiarity with the patient himself through the media of a searching history, a painstaking physical examination and careful observation.
2. The clinician should not order any laboratory procedure whose principles and limitations he does not himself understand.
3. He should not make use of a test before its real value has been definitely demonstrated.
4. He should be sure that the laboratory is in competent and authoritative hands before he places faith in its reports.

ORIGINAL ARTICLES

THE CORRECTION OF STERILITY*

F. HURST MAIER, M.D., F. A. C. S.
PHILADELPHIA

A paper on the "prevention of conception" would probably meet with the more popular approval of the laity, than one on the "correction of sterility." Reproduction of the species, however, is a fundamental law and any contribution, be it ever so humble, that is concerned with its enforcement needs no apology. Especially does this apply to us, when it is stated that there is a "decrease in the average birth rate of our natural born population, from year to year;" and to the world in general, when we consider the colossal loss of life it has sustained as a result of the great war.

Accurate statistics on the frequency of sterility are impossible. Dickinson states that 10-20 percent. of the marriages are childless; while Shaeffer believes that only one-half of these are due to an inability to conceive.

Formerly, the onus of a barren marriage was borne by the female. This fallacy still obtains, to a large extent, even among the more intelligent laymen. Recent investigations have shown that the husband's defective semen, guaged mostly from a single examination of a condom specimen, is generally said to be responsible for one in five of these disabilities. Huhner doubles this figure, while others would place it even higher. It may, therefore, be taken for granted that the "male is equally responsible with the female, in sterile marriages."

It is neither possible nor desirable, in a paper as brief as this one must necessarily be, to enter into a text book classification of the multitudinous causes and methods of treatment for the correction of sterility. I will, therefore, confine myself to those phases of the subject which, in my judgment and experience, will be of the greatest value to you in your work.

While many sterilities are, undoubtedly, the result of causes of an anatomic or pathologic character, there are probably a greater number that are purely functional, and due to the physiological alterations in general or local conditions. Such alterations, moreover, often coexist in the sterilities of pathologic origin, and when unrecognized, and consequently unremedied, unquestionably explain a large proportion of the continued infertilities after operation.

The elimination of the male, verified by a number of examinations of his semen, should be the routine first step in any program for the correction of sterility.

Subsequently, the problem becomes one of diagnosis and appropriate treatment. With the exclusion of obvious anatomic or pathologic lesions, a careful study of the case will usually result in the investigation narrowing down to conditions of minor pathological importance, or disturbances of a functional nature. As these cases are frequently amenable to medical treatment, they should be subjected to an intelligent application of local and general measures for a period of time extending over three to six months.

Since the introduction of Ruben's simple, practical, and apparently safe method of determining tubal patency by the introduction of oxygen into the uterus, there are some who contend that this method should be carried out as an initial procedure, before subjecting a patient to a longer or shorter period of nonoperative treatment. Tubal permeability being established, and all other causal factors being eliminated, one might then with perfect propriety, practice artificial insemination, as recommended by Dickinson. On the other hand, if the tubes are found to be impervious to the entrance of the oxygen, surgical measures could be resorted to without delay.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

However, there is another side to this question. Not infrequently the cause of sterility in a young married woman is a gonorrhœal infection of the cervix of a mild but persistent type. The infection rarely extends beyond the internal os until after the first pregnancy and some of the most spectacular cures of sterility have been effected by the elimination of this inflammation.

Any measures, therefore, practiced either for diagnostic or therapeutic purposes, that are likely to convey contamination beyond the internal os uteri, are liable to set up an inflammation of the tubes and thus defeat the very purpose for which they are performed. For this reason I welcome this opportunity to protest most emphatically against the not uncommon and reprehensible practice of indiscriminately dilating and curretting the uteri of newly married women, for the cure of sterility.

Endocervicitis should always receive efficient treatment, while acid secretions of the vagina are to be neutralized by douches of mild alkaline solutions, given an hour or two before coitus, and leucorrhœal discharges must be arrested with antiseptic irrigations. Pelvic inflammation calls for hydrotherapeutic activities of a character that stimulate the circulation, thereby promoting the absorbtion of inflammatory products and reestablishing the tone of the fibromuscular structures as well.

Some women as a result of a relaxed vulvar outlet, a congenitally short vaginal wall, or retrodisplaced uterus, are unable to retain seminal fluid. I have seen this corrected with a successful outcome, in one case, by the patient keeping a hard pillow under her pelvis during, and for some hours after sexual intercourse. The use of a condom-covered lamb's wool tampon, post coitem, has also been recommended for this purpose.

During this period, the sexual life of the patient is to be regulated. It has been my experience that these cases do better if intercourse is practiced only at the solicitation of the female. This prevents congestion of the pelvic organs by securing a reflux as well as an afflux of blood to the parts. As a rule, too, the female libido occurs at a time, post menstrum, when conception is most likely to take place. In addition, the physical and psychical condition of the patient is to be brought up to the highest plane by the regulation of her diet, bowels, and general mode of living.

The recent studies of Reynolds and Macomber, on the influence of diet on sterility, are interesting and instructive, and their scientific results afford us a most logical explanation for that old problem, "why the mating of a normal female with an equally normal male remains sterile, when the subsequent union of each with another, demonstrates the fertility of both." In their experiments, they were able to reduce the individual fertility of rats to such a point that when mated they remained sterile; conversely, when these infertile rats were remated with highly fertile ones the matings would prove fertile.

In referring to its application to the human species, they state that the diet low in proteins and calcium was representative of the war and post war diets from which portions of Europe have been, and are still suffering and that statistics show a corresponding decrease in human fertility in those countries.

Personally, I believe that a large percentage of the purely functional sterilities are of endocrinopathic origin, the source of which may at times be of a dietetic character. Nor should this be a matter of much comment, when we consider that the development and integrity of the reproductive organs and their functions are dependent on all, or almost all, of the glands of internal secretion. Many cases of primary sterility, or more strictly speaking, delayed fertility, of a functional character in young married women, are due to conditions not unlike those which we see in cases of delayed puberty. The energies of the endocrinous system, through necessity, are engaged for the time being, in the somatic development of the individual, while the sexual development is held in abeyance. The woman may be fully developed in every particular, except in regard to her genital organs and their functions.

Similarly, insufficiency of the thyroid or pituitary secretions may prevent a full development of the genital organs, just as diminished secretions of these glands, later on in her reproductive life, may produce an atrophy of the genital organs with cessation of their functions. Women thus suffering from hypothyroidism or hypopituitarism lack energy, are usually obese, sexually deficient and sterile. They also suffer from amenorrhœa or scanty menstruation; the latter often associated with dysmenorrhea. At times there may be difficulty in distinguishing at first sight between these two conditions. In both we have obesity. A diagnosis can usually be made, however, by noting the texture of the patient's skin. When the thyroid is at fault it is coarse and rough, while with pituitary insufficiency it is smooth and fine. The latter is also accompanied by low bloodpressure and a tendency to increased carbohydrate tolerance. Many of these cases can be treated successfully by the administration of large doses of thyroid or pituitary extracts.

It is not the fully developed, characteristic, and easily diagnosed cases of acromegaly, Grave's disease, myxedema, or Addison's disease, with their absolute and often incurable sterility, that concern us here; but the ill defined, obscure and often unrecognizable minor or variant forms of endocrinopathic disturbances, with their reduced fertility, that offer the most favorable field for our therapeutic endeavors and the measure of our success depends largely upon our ability to recognize clearly these insiduous, larval types of the disease.

It is quite probable that at least a part of our present contradictory results in the therapeutic application of gland products, especially those made from the corpus luteum, may be due to the fact that their active principles vary in potency throughout the monthly cycle—a consideration which is disregarded both in their preparation and in their administration.

Although the corpus luteum appears to have a trophic influence in the fertilization and implantation of the ovum and its extract is said to be of value in the treatment of habitual abortions, my clinical observations have been that better results can be obtained by the additional administration of its supplementary hormone, namely the extract of the thyroid gland. This fact however, is quite in accord with the principles of what is known as organotherapy. To obtain satisfactory results, we must study each case individually, and administer extracts made from the necessary supplementary or antagonistic secretions. Finally, before leaving this most interesting subject, we must remember that the diagnostic and therapeutic problem becomes more complicated in those cases which reveal evidences of endocrinopathic disturbances plus insiduous pathological conditions.

As the time allotted to me has nearly expired, I will confine the rest of my paper to the discussion of tubal obstructions and cystic degenerations of the ovaries. These two conditions are probably more largely responsible for sterility than any other gross pathological causes.

Our method of approach in operations done for the correction of sterility must be somewhat different from that in those done for the relief of symptoms alone. Our primary object must have in view the preservation of tne organs and their functions. Indeed, the wise surgeon is the one that informs his patient in advance that the work done will be of a conservative, rather than of a radical nature; and that there is always a possibility that her symptoms may return. In the meantime, however, she may become pregnant.

It is difficult at all times to give correct statistics on any special subject, let alone on those bearing on the success of this class of operations. The results, however, obtained by Reynolds, Childs, Solomons and others in their work, are sufficiently good to fully justify the continued practice of operative procedures of a conservative character.

Tubal obstruction is usually the result of a gonorrhœal salpingitis. It is not often that a septic infection produces a permanent closure of the tube, although there are some that maintain that a hydrosalpinx is always of septic origin. The most favorable type of tubal obstruction is the one in which the tube is slightly enlarged, thickened and clubshaped. Its abdominal osteum is closed, while macroscopically at least, the uterine end has the appearance of being normal. Together with the ovary it is covered by, or embedded in, a mass of gauzy adhesions. Separation of the adhesions frees the tube and usually uncovers a fairly normal ovary. Indeed, it is a matter of surprise, and also for congratulation, how little the substance of the ovary is involved, even in the severer grades of pelvic infection of gonorrhœal origin. Further manipulation will, at times, lead to the escape of the imprisoned fimbriæ, with a resultant patulous ostium.

In other forms of the disease, especially the higher grades of infection, when there is a more pronounced pyosalpinx or hydrosalpinx, it will be necessary to do a salpingostomy or to resort to resection of a part of the tube. At times it requires a degree of courage, as well as judgment, to know just how far to go in a conservative operation, when the pathology consists of a particularly nasty pus tube, and we must assume that the uterine end is hermetically sealed. Ries states that the histological examination of a pyosalpinx shows only that it is something that can be overcome, later permitting a return to normal. Cases have been reported in which pregnancy has followed after operations on pyosalpinges as well as hydrosalpinges.

The second group is by far the more favorable one for operative interference, not only as regards the correction of the sterility, but for the relief of the symptoms as well. The pathology consists of cystic degeneration of the ovaries. There is a thickened tunica albuginea, and the substance of the ovary is studded with a multiplicity of small cysts, or each ovary is the seat of a single simple cyst, varying in size from a walnut to a grapefruit. The ovules cannot escape, hence conception is impossible. The condition is usually accompanied by a retrodisplacement of the uterus, and not infrequently by varicose veins of the broad ligiment. Resection of the cystic portions of the ovaries, together with one of the operative procedures for the correction of the displacement, is usually followed by a large percentage of success.

In conclusion, it must be remembered that not infrequently we may have a functional alteration coexisting with the pathological condition. Indeed, at times, the disturbances may be the result of the operative procedure, and if unrecognized and consequently untreated, may be the cause of continued infertility even after the pathology has been corrected. For this reason, I believe if we are to achieve the best results, it will be the part of wisdom to follow out a similar plan of treatment, post operationem from that outlined under the scheme of medical treatment.

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DISCUSSION

DR. HENRY D. JUMP (Philadelphia): My excuse for discussing a paper on sterility lies in the fact that some cases are due to general physical disability separate from or in connection with gynecological conditions. Medical treatment may alleviate this physical disability to such an extent that conception will follow. It is also within the province of the family physician to assist in determining if the fault lies in the husband. That part of the paper dealing with the effect of the ductless glands upon sterility is of timely interest. In no branch of medicine has there been more written lately than that of the endocrines. Much of this work however is contradictory; false inferences have been made, false conclusions drawn and unjustifiable claims made. We must therefore be on guard in expecting results from the use of ductless gland therapy, except in the few instances where facts are established. That there is a relationship between the endocrines and the development of the genital organs and functions is established. The thymus and pineal atrophy before puberty; disturbances of the pineal and anterior pituitary body are associated with precocious puberty; changes occur in the thyroid at puberty and with pregnancy; tumors of the adrenal cortex are followed by virilism, hirsutism or precocious puberty. In hypothyroidism, dystrophy adiposis genitalis and Addison's disease, sterility occurs. We are therefore justified in believing that there is a correlation of function between these glands and that some cases of sterility are probably due to a derangement of this correlation.

The testicle consists of the interstitial cells of Leydig which are concerned with growth and the seminiferous tubules which are concerned with procreation. The ovary probably has such tissues, but this fact has not been established. One or the other of these tissues may be inactive. It is probable that the suprarenal cortex governs the activity of these tissues. We hear much of the polyglandular syndrome and pluriglandular treatment, particularly of such conditions as this which we are discussing. But we know little of such and gland administration has usually been disappointing. I am hopeful, however, of development of a better understanding of these derangements and of the treatment of such by ductless glands. At present however we must depend upon the skill of the gynecologist in the treatment of the wife, as Dr. Maier has so well outlined, and on general physical treatment of both husband and wife where such is indicated.

DR. BROOKE M. ANSPACH (Philadelphia): Dr. Maier's paper has covered the subject very thoroughly. There are just one or two points I should like to bring to your attention. As Dr. Maier suggested, in the practical treatment of sterility—the woman that comes to you and wants children and has not been fortunate enough to become pregnant—we must be sure before we proceed very far with her that the interested person of the opposite sex is entirely competent. In carrying out the examination of the male the plan of Hühner is recommended. Hühner proposed that the woman should be examined within a very short time of coitus. This can usually be arranged rather easily, and without any objection on the part of the husband; and if she presents herself within an hour of coitus the examination of the vaginal tract will show whether the spermatic particles are present and whether they are normally active. It is no longer considered sufficient to find spermatic particles. You must find them living and you must find them normally active. Reynolds, of Boston, who has done a great deal of work on the subject of sterility, has drawn particular attention to this. If you read his paper you will find he describes five types of motion in spermatic particles, five species of activity: the first, a very active stage, in which the spermatozoa swim very rapidly; the next stage, in which they swim less rapidly but seem to have some tactile reaction by which they are able to avoid obstacles in their way; and the third, in which they have a bunting motion. trying to force their way between cells in the uterovaginal tract. You can easily demonstrate this to your own satisfaction by making an examination. If, within an hour of coitus, you find the spermatic particles present and active in any one of the three active stages, then you can feel that the male element is satisfactory, and you may proceed with the examination of the woman. The difficult cases of sterility are not the ones in which you find gross lesions. The difficult ones, as Dr. Maier indicated, are the ones in which the individual is not well developed antomically or functionally. These women usually give a history of late development of menstrual life. Their periods are apt to be irregular and scanty. They very often, at about the age of thirty, begin to accumulate fat, and they present a picture which is well known to you all.

I agree with Dr. Jump very fully that we have a tendency to go too far with the endocrine influence and the endocrine therapy, but of course when you find a woman of this sort you are quite sure she has not sufficient ovarian secretion, and you can with safety give her some in addition. It very often has an influence upon the amount of her menstrual flow or the periodicity; there is no doubt about that. In addition to the ovarian therapy, in such cases the obesity seems to be associated with dysfunction of the anterior lobe of the pituitary body and dysfunction of the thyroid, and I think I have surely seen some improvement by small doses of these extracts, carefully administered and very carefully watched. In addition to this the patient does well who regulates her diet so as to overcome as far as possible the excessive obesity.

The experience of Reynolds, which was reported in June, of the influence of diet on the fertility of rats, shows that a diet rich in calcium salts helped the previously non-fertile rat to become fertile; and in the discussion of Reynold's paper which I had the pleasure of hearing, Dr. Blair Bell of Liverpool, who has made many studies along the lines of comparative embryology and anatomy, declared that this was quite confirmatory of his experiments with hens and some of the other egg-producing creatures. This is just as we all found out in the country years ago, i. e., if you feed chickens with calcium salts (oyster shells), they lay more eggs. Blair Bell recommended that in sterile women we also use the calcium salts. This can be conveniently given in the form of calcium lactate.

Dr. Maier (in closing): I feel that there is very little to be said, as I gather from the remarks of both Drs. Jump and Anspach their views are, in a general way, in accord with my own. As I stated in one part of my paper that I believed a large number of sterilities were probably functional in character, and that many of them should be of endocrine origin is not surprising when we consider the influence of the internal secretions on the development and the integrity of the genital organs and their functions. I believe that when we are once able to recognize the minor and varient types of endocrinopathic disturbances, it will enable us to clear up many of the present day obscure cases of sterility.

I am glad that Dr. Anspach brought up the question of lime salts in these cases. Bell, in his splendid work on this subject, has shown how intimately the calcium metabolism is connected with the endocrine system.

Reynolds and Macomber cite an interesting case of a woman who in her first year of marriage had given birth to a full termed child. During the subsequent five years, she aborted six times. In looking for a cause, it was found that her diet during this period had been deficient in calcium salts. She was given large amounts of calcium lactate and her diet was rearranged to include foods rich in these salts. Shortly afterwards she went into her seventh pregnancy which was carried out to a successful termination.

TUBERCULOUS PERITONITIS*

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Tuberculosis of the peritoneum occurs either as an acute or a chronic process, the acute form being far less common than the chronic form. This disease is found in association with a well advanced tuberculosis, usually of the lungs or as a disease process which appears to be localized in the abdomen. The purpose of this paper is to discuss the latter form of the disease which presents symptoms referable principally to the peritoneum. It is generally believed that all cases of chronic tuberculous infection of the peritoneum are secondary to a tuberculous infection in some other part of the body, though the primary focus is very insignificant. This view is held by numerous authorities who believe that a thorough and exhaustive investigation of the patient will demonstrate the original focus of infection outside of the peritoneum. However, no less an authority than Osler reports that five out of seventeen postmortem examinations made upon a series of cases of tuberculous peritonitis disclosed no tuberculous foci outside the peritoneum.

Aside from tuberculosis of the peritoneum occurring secondary to a small focus of tuberculosis outside of the peritoneum, the disease may be a part of a general serous membrane infection, as in tuberculosis of the peritoneum, pleura and pericardium. The source of the infection to which the type of tuberculosis of the peritoneum we have under consideration can be traced is usually tuberculosis of the lungs or the genito-urinary tract, the pelvic organs in the female, the genitals of the male, the bones, the lymph nodes or the skin. Strange as it may seem, tuberculosis of the intestines as the primary cause of the tuberculosis that subsequently produces a generalized tuberculosis of the peritoneum is not common.

The disease occurs at all ages of life but seems to be slightly more commonly recognized between the ages of thirty to forty years. Older writers described a form of peritonitis which came on insiduously during the adolescent period and usually with a few symptoms, the prominent one being enlargement or distension of the abdomen which usually disappeared without much treatment. This condition came on very slowly and disappeared in a like manner. From the result of laparotomy in the cases it was observed that tuberculosis of the peritoneum was the exciting factor. No doubt during childhood low grade tuberculous infections of the peritoneum are more common than is generally recognized.

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Three forms of tuberculous infection of the peritoneum are described, the ascitic, the dry or fibrinosplastic and the caseous. These three forms may represent various stages of the condition. Treatment instituted early may modify the disease so that but one of the mentioned forms may be present, for example, the dry or the ascitic form. The typical pathological picture of generalized tuberculosis is seen in the chronic and subacute form of the disease. There is present a generous millet-like eruption on the visceral and parietal peritoneum, which often coalesce and form large nodules with fluid. The fluid may be free in the abdomen or encysted. Associated with these findings are found masses which usually can readily be palpated and which consist of either coils of intestine matted together, a collection of ascitic fluid or a rolled up contracted omentum. A fibrinous exudate is usually present which may lead to cicatrical masses. This cicatrical contraction is most marked in the mesentery omentum. Localized tuberculous peritonitis may be present with military tubercules scattered beneath a tuberculous ulceration of the intestine, about tuberculous glands or in the vicinity of tuberculous pelvic organs in the female.

SYMPTOMS

The symptoms of tuberculosis of the peritoneum differ materially from those of other infections of the peritoneum. The onset is usually slow and often the diagnosis can be readily made. On the other hand the condition may be difficult to differentiate from ovarian cyst, cirrhosis of the liver, portal obstruction, slowly perforating gastric ulcer, ectopic tubal pregnancy which has slowly ruptured, cardiac or renal disease with ascitic and enteric fever. The ascitic type of the disease does not present the difficulties that the dry form does. Vague abdominal pains and at times nausea which may be ascribed to indigestion may be present and vomiting is not uncommon as an early and distressing symptom.

Tuberculous peritonitis may be present without producing any characteristic symptoms, or may be discovered during an operation for an entirely different intra-abdominal condition, such as a hernia or acute appendicitis. The writer had the opportunity of studying a case of a soldier in one of the U. S. Army Base Hospitals in France who complained that his abdomen had slowly increased in size and that wearing his cartridge belt caused considerable discomfort. The abdomen would measure from one and one-half to three inches more some days than others. His bowels were moved thoroughly and regularly and he complained of no gas. Physical examination was entirely negative except for variable increase in the size of the girth. The soldier stated that he wished to be operated upon for this distressing condition which he stated rendered him unfit for duty. After considerable difficulty in persuading a surgeon, a laparatomy was performed and it was found that he had enlarged retroperitoneal glands with an area of tuberculosis of the peritoneum about them. The glands were not broken down and were readily removed, whereupon the soldier made an uninterrupted recovery. Tubercle bacilli were recovered from the glands. No other evidence of active tuberculosis in the body was discovered, except an x-ray diagnosis of an old healed calcareous lesion in the chest. This case is cited to call attention to the difficulty at times in recognizing the disease in a relatively early stage.

In the generalized tuberculous infection of the peritoneum, the bowel movements are disturbed. Constipation seems to be the rule unless tuberculous ulceration of the bowel exists. The patient early complains of loss of strength, probably with some loss of weight, and vague symptoms referable to the gastro-intestinal tract. It is in this stage that the disease is difficult to recognize and at this time that the condition may entirely recover without much treatment. A slight fever may be present, and loss of appetite. Physical examination of the abdomen early may disclose only slight tenderness throughout or it may be confined to the right side. At this stage usually no masses or fluid are discovered. Gaseous distensions of the abdomen may be present very early in the course of the disease. The pulse rate as a rule is increased.

Pain.—Early in the disease no frank pain may be present and only vague abdominal distress. Later the distress is associated with occasional pain attacks, which, as the disease progresses, becomes more frequent and eventually continuous. The pain is likely to be of a colicky nature, although at times it is of a dull aching character and instead of being generalized in its distribution it is confined to the right lower quadrant of abdomen in the region of McBurney's point. With the appearance of fluid the pain usually becomes much less severe and may disappear, at least for days. It must be remembered that tuberculosis of the peritoneum may be present without any pain whatsoever. In some of the patients the taking of food is followed by pains in the epigastrium about one hour after meals, suggesting peptic ulcer, the individuals being free from pain between meals.

Fever.—In the chronic forms, fever may be absent during the entire course and subnormal temperature is not uncommon. If fever is present, it is usually moderate, of the subcontinuous, remittent or intermittent type. The fever may disappear for short periods. The temperature range may be similar to that in typhoid fever. In patients with associated tuberculosis of the intestines, septic types of temperature are present. The average patient with chronic tuberculosis of the peritoneum seldom runs a fever in excess of 100° F.

EXAMINATION OF THE ABDOMEN

In children as a general rule the abdomen is distended. In older patients the increase in the size of the abdomen is not always present. The enlargement of the abdomen may be due to simple gaseous distension or to ascites, or to distension due to kinking of the intestines as the result of adhesions. Most commonly the distension is due to fluid either encysted or free in the abdomen. These encysted collections of fluid are usually readily palpated.

Masses may be present in the abdomen due to dense infiltration of the omentum with tubercles and a fibrinous exudate which may be followed by a dense doughy or cordlike mass extending across the abdomen. When the mesentery is extensively involved the thickening and contraction of this structure may pull the intestines into a tumor-like mass occupying the right side of the abdomen. In some cases of tuberculous peritonitis, the abdomen is retracted, presenting a scaphoid appearance with tenderness and a thickening of the cecum which is readily palpable.

Atrophic cirrhosis of the liver may be associated early but more commonly later in its course with tuberculosis of the peritoneum. The fluid, under these circumstances, is usually due to portal obstruction rather than to tuberculous infection and presents enormous ascites. The fluid in the abdomen is usually serous in character but occasionally may be hemorrhagic, seropurulent or purulent. It is difficult to recover the tubercle bacilli from the fluid. The injection of the fluid from the abdomen in tuberculous peritonitis into guinea pigs produces the characteristic lesions.

It is not common to find the liver enlarged, but the spleen is often enlarged, which is difficult to recognize in the presence of fluid in the abdomen. Usually the blood shows an anemia with a normal leucopenia or slight increase in the number of leucocytes in an uncomplicated case of tuberculous peritonitis. The skin may show a diffuse pigmentation as seen in Addison's disease.

The diagnosis of tuberculous peritonitis is not always easy, but if one makes a thorough, complete examination of the patient, tuberculous peritonitis will be more frequently recognized.

SYMPTOMS OF THE ACUTE FORM

This form of tuberculous peritonitis is often difficult to diagnose, aping as it does acute abdominal lesions, e. g., acute appendicitis, intestinal obstruction, acute cholecystitis, etc. The previous history of the patient usually shows gastro-intestinal disturbances, loss in weight and probable tuberculous lesions in the lungs, genital tract, bones or abdominal masses. The acute type is not very common. With abdominal tenderness, nausea, acute pain, vomiting, some abdominal rigidity, surgical intervention in all events is here indicated not only to clear up the diagnosis but also as a curative measure.

A patient with or without ascites, with symptoms of a generalized peritonitis in the presence of tuberculous foci in other parts of the body, with a history of insiduous onset, gastro-intestinal symptoms, emaciation and loss of strength, together with masses in the abdomen, and slight or no fever, strongly suggests tuberculous peritonitis.

Carcinoma of abdominal viscera, disease of pelvic organs in women, including ovarian cyst, carcinomatosis of the peritoneum, chronic appendicitis, slowly rupturing ectopic pregnancy, chronic intestinal obstruction, cirrhosis of the liver, are some of the more common conditions mistaken for tuberculous peritonitis.

TREATMENT

Mild cases may disappear with very little if any treatment. A strict anti-tuberculosis regime must be kept up for a considerable length of time, with the same precautions that are observed in pulmonary tuberculosis. Rest, fresh air, good food over a period of months have caused tuberculous infections of the peritoneum to disappear spontaneously. Even when ascites has been associated with this condition, this plan of treatment has resulted in a disappearance of fluid without paracentesis.

If medical treatment is of no avail, after a thorough trial, a simple laparatomy with evacuation of fluid and removal of tuberculous foci, as tubes, ovaries, glands, appendices, followed by closure, is attended with good results. The failures of this treatment are usually seen in far advanced cases, or with advanced or multiple tuberculous foci in other parts of the body. Likewise failure has attended those patients who apparently did well for a short period after operation but did not observe for a sufficient length of time the anti-tuberculous method of living. This may have to be kept up for more than a year, until all evidences of tuberculous activity in the body have ceased.

Treatment by the x-ray has done considerable to hasten recovery with or without surgical interference. It has not been of value in patients who have fluid in the abdomen.

Too many patients with actual or suspected tuberculosis continue to receive ether anesthesia. Under no circumstances should ether be given for laparotomy, nitrous oxide and oxygen or local anesthesia being preferred in tuberculous subjects.

GENERALIZED INFECTION IN TUBERCULOSIS*

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Tuberculosis is usually regarded as local. Any generalization occurring by bloodstream dissemination can practically always be traced to a local process in some region of the body. Such local disease has been shown to be practically universal in civilized adult human beings. Warthin (1) and Opie (2) found evidence of it in every adult examined and it has come to be regarded as a more or less beneficial vaccination if it is not too extensive. Evidence of generalized infection is encountered less frequently though it is fairly common. It has been common to find tubercules in the liver in cases of phthisis; Walsh (3) has found them in the kidney and liver and Klotz (4) has shown the frequency of obsolete miliary tubercules of the spleen in routine autopsy material. Torrey (5) bases prognostic importance on the occurrence of miliary tubercules in the liver in phthisis, attempting to show from autopsy material that such cases died from the effects of the liver involvement rather than from actual removal of pulmonary respiratory function or intercurrent affection. These observations are well established and indicate the great frequency of generalization. It is so frequent that one cannot escape inquiring whether tuberculosis is not invariably a generalized infection although its clinical manifestations are clearly local in nature.

Generalized infection, even of the severest type, is a rather elusive condition for diagnosis during life so that its frequency is greater than is indicated by clinical incidence and, if the point we wish to make is not amiss, greater than post mortem findings indicate.

The means of determining the existence of generalized infection are: clinical diagnosis, surgical operation, postmortem examination, multiple foci occurring during life, occurrence of iridal and chorioidal tubercles, presence of tubercle bacilli in blood, excretions or exudates. It is known that the patient very frequently does not die in spite of the fact that acute generalized tuberculosis is generally considered to be a fatal condition. There are degrees of generalized infection, as shown long ago by Weigert, the milder ones of which are often not only not fatal but usually unrecognized. Probably the vast majority of these cases are overlooked clinically, and, if the tubercules heal, at postmortem examination as well. Even when scars remain they are often so small as to be readily missed. In extensive generalized miliary tuberculosis, the patient probably always dies for there is no proof that such infection can be withstood. In this type the very fact that such a severe condition arose points to one of two determining factors, namely, low resistance of the individual or great virulence of the tubercle bacillus. It is not conceivable, in the case of a bacillus of low virulence that any individual would receive a dose massive enough at one time to produce such severe infection in the absence of lowered resistance. In such cases there is a severe septicemia and a most intense riddling with tubercle bacilli. To rid itself of all of the myriads of tubercles resulting the body would be accomplishing a great task of which it may, however, be capable. In some animals, as the mouse [Yersin (6)], tuberculosis is of the nature of a septicemia with little or no formation of tubercules. In individuals with greatly lowered resistance and highly virulent infection, this form may probably rarely occur in the human subject, and might be entirely overlooked.

A tubercle represents a productive inflammatory lesion and as such leaves a scar. From the structure of a tubercle, however, this does not necessarily hold true in the smaller lesions, for here if necrosis and inflammatory fibrosis do not occur, there is merely a small group of cells representing an avascular tumor. Gardner (7) has quite recently shown that caseous tubercles can be entirely absorbed and leave no traces. This excellent work added to such previous observations as that of Koch (8), Trudeau (9) and Theobald Smith (10) and the results given below prove conclusively that tubercles can heal without leaving distinctive vestiges. Bartel (11) and others have shown that the tubercle bacillus may lodge in a tissue without the production of a typical tubercle. Since it has been demonstrated that practically all adult civilized individuals have been infected with tubercle bacilli as shown by the healed lesions it should be a matter of importance to determine whether purely local tuberculosis is possible.

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FAILURE TO PRODUCE LOCAL TUBERCULOSIS WITHOUT GENERALIZED INFECTION IN ANIMALS

Aside from Koch's (8) and Trudeau's (9) localized tuberculosis in vaccinated animals or the local injection of dead or avirulent bacilli, there does not appear to have been such a condition produced experimentally. Even dead bacilli are carried onward by the lymph or bloodstream or by phagocytes. Carbon is carried in the same way, [McJunkin (12)]. Whether they produced tubercles or not their deposition in a tissue of the interior of the body must be regarded as an infection. Such dead or disintegrated bacilli cannot be detected when in small numbers but we know their presence and products under suitable conditions are productive of signs and symptoms. For this reason the possibility of generalization of the infection in every case of tuberculous disease or infection is to be kept in mind. We cannot deal with tuberculosis locally for tuberculosis is a generalized systematic disease. In this respect tuberculosis may well be compared to syphilis and perhaps to every infectious disease.

When living tubercle bacilli are injected locally they tend to multiply and progress onward and produce generalization. Avirulent bacilli in sufficient numbers will do the same as is shown by Krause (13) and Gardner (7).

Experiment I. Injection of a bovine culture (0.0005 mg.) were made into the renal artery of two young dogs. The animals appeared well and grew large. One dog escaped. At the end of six months the remaining dog showed only one flat fibrous tubercle at one pole of the kidney with 1 to 2 dozen small tubercles of similar nature in the apical portion of the left lung. No other lesions were found.

A number of rabbits were treated in a similar manner and in addition local injections were made into the ureter and its pelvis in another set. The result was a generalized miliary tuberculosis, as would be expected, but the local lesion was much more marked and showed more caseation.

Disregarding the portal of entry, the local phenomena may be in great measure attributed to previous sensitization or allergy in the form of preceding infection unless lack of uniformity in the lesions in the organs of generally infected animals is considered. It is quite well established that all tissues are susceptible to tuberculous infection though in generalized miliary tuberculosis such organs as the pancreas, thyroid gland and muscles and, in the guinea pig, the kidneys are infrequently involved. Nevertheless, we know that tubercle bacilli are present in the blood in relatively large numbers and must pass through these organs.

INEQUALITY IN THE DISTRIBUTION OF MILIARY TUBERCLES IN GENERALIZED INFECTION. —ORGAN IMMUNITY.

Only when there is a massive number of organisms in the bloodstream under certain conditions are such organs as the pancreas involved. In other forms, on the other hand, such as the meningitic or pneumonic, even though there is a generalized miliary condition, certain organs are more manifestly involved, though these organs may likewise be "secondarily" infected in view of the constant findings in all cases of an older focus from which the disease was probably disseminated. Tuberculous meningitis must be regarded as rarely primary or local in origin, being in this respect akin to the meningococcic and pneumonic forms.

It has been pointed out [Theobald Smith (11), Krause (13)] that the kidney is not involved in the generalized tuberculosis following inoculation in the guinea pig. This peculiar observation is the more remarkable because the kidney in the rabbit and in man is rarely or never free from tubercles in severe generalized infection. Krause (13) has given a very acceptable explanation of the freedom from tubercles of the lungs in guinea pigs inoculated with Trudeau's lowly virulent R 1 culture. The "immunity" of the kidney in the guinea pig seemed to offer an excellent opportunity for the study of immunity in tuberculosis and a means of elucidating such inequality not only for this organ but also for other organs in different species and in different infections.

In the first place it became necessary to discover whether "spontaneous" tuberculosis of the guinea pig kidney ever occurs after infection. Animals were always carefully examined and microscopic sections made but no tubercles or suggestive lesions were found. It began to appear as if it never occurred spontaneously until Dr. Haythorn informed the writer that he had seen it at least once in some of his material. In agreement with this only a few weeks ago we found a single, small typical tubercle in the kidney of a guinea pig which had been inoculated into the groin with tuberculous urine. No tubercle bacilli could be demonstrated in sections. This animal showed, in contrast to this small, isolated tubercle, a most wide-spread miliary tuberculosis especially in the lung, which in the guinea pig is more apt to resemble the kidney in scarcity of at least microscopic tubercles. The scarcity of tubercles in the lung of the guinea pig with certain types of tuberculous infection, has been explained by Krause, and Gardner (7) showed that the lung nevertheless contained tubercle bacilli as early as the 5th day after groin injection of the lowly virulent R 1 culture.

Experiment II. By direct inoculation into the kidney of a culture of tubercle bacilli in two guinea pigs, a definite tuberculosis of this organ was produced and from this a generalized tuberculosis developed. In spite of this relatively enormous injection into this organ, only the portion of the organ immediately surrounding the needle puncture showed the tuberculous lesion. The rest of the kidney and the opposite kidney remained free from tubercles.

Other experiments along this line have been performed and are being conducted. We cannot enter into the details in this paper.

THE HEALING OF THE TUBERCLE

Pathologists have practically always assumed that a tubercle invariably leaves a scar. In this they have been supported by the almost monotonous finding of healed traces of tubercles at autopsy. It is no wonder that such a view was held. Nevertheless we find here and there an expression indicating that there were possibly more tubercles present which left no traces. Such an expression is made by Klotz (4). The reason for all this uncertainty is plainly evident first of all, because the course of the small tubercle could not be followed in human cases and even in animals where, under the most favorable conditions such as tubercles in the iris of the rabbit, Trudeau found traces of the tubercles remaining; and second, because pathologically we know that proliferative lesions are followed by scarring. One cannot take exception to this last statement even in view of the work of Gardner (7), for he still finds in some instances slight remains of this proliferative condition. It is only a question of inability to recognize the finest alterations resulting from such lesions. For practical purposes, however, we must fully accept his results because it is unlikely that the minute traces of such small early healed tubercles will ever be fully diagnostic of the disease, even if they are demonstrable.

In the course of experimental work upon the lungs of tuberculous rabbits we had an opportunity of noting tubercles in various stages of development and healing such as is rarely possible in the human being. Soper (14) found evidence of complete healing of tubercles in the liver of the vaccinated rabbit during experimental work on this organ. He used bovine bacilli. It should be recollected that, as Theobald Smith (10) first showed, the human tubercle bacillus shows low pathogenic powers for rabbits. The lesions tend to become stationary or heal. This is the most valuable method of differentiating bovine from human bacilli. The bovine bacillus brings about a very rapid, intense, fatal miliary tuberculosis.

Experiment III. Rabbits were inoculated intravenously with 2 mg. of human tubercle bacilli suspended in 1 c.c. of saline solution. The organisms were first treated with 3% sodium hydroxide for 5 hours, washed and suspended. Usually after 2 weeks the chest was opened for various purposes and the small, gray, translucent tubercles, few in number, were observed. Some tubercles were large. At varying periods afterward, ranging from a few weeks to months, these animals either died or were killed. Those living six or eight months never showed any extensive lesions and in some it was most difficult to find a single tubercle in the lung and particularly at the site where they had been observed.

In a series of human tubercle bacillus injections in which all animals at one time received the same emulsion in the same dose, a similar observation was made as one after another died or was killed at monthly intervals. Those dying after 6 or 7 months showed only occasionally tubercles here and there. In fact there was no guide in the gross by which one could select areas for microscopic section. In an attempt afterward to prove this healing more clearly, use was made of the kidney but so far no results have been obtained in a period of 3 months. The liver and lung appear more suitable for this work. The liver shows the same healing as is found in the lung.

THE INFLUENCE OF TRAUMA IN GENERALIZED TUBERCULOSIS

The surgical fact that trauma frequently produces bone or joint tuberculosis is no less true in many other infections. One essential requisite is the occurrence of a bacteremia preceding, simultaneously with or following the trauma. If the organisms have located at the site previously, they may have been dormant in a small lesion or without lesion, if they happened along at the time of injury or afterward it is a mere coincidence but perhaps an unusually common one. At all events one thing is indicated, namely, the presence of a bacteremia in an apparently healthy individual.

Experimentally, trauma has been used to advantage to cause a greater susceptibility. Orth (15) has shown that crushing of the rabbit kidney caused the development of tuberculosis in this organ and Bloch (16) has made use of this observation practically by crushing the inguinal nodes in guinea pigs previous to urine inoculations for the detection of the presence of tubercle bacilli.

The selection of the rabbit kidney after subcutaneous inoculation with human tubercle bacilli can have no worthy objection since in such cases the kidneys may show no tubercles but if introduced intravenously in large enough numbers, or if a bovine bacillus is used, tuberculosis will always develop in the kidneys without any trauma. Because of the great infrequency of renal tuberculosis in the guinea pig this organ would seem to be more suitable for the determination of the effect of trauma.

Experiment IV. Two guinea pigs previously inoculated with H 37 culture were used. The first was injected 25 days before into the peritoneal cavity with 10 mg. of the culture in 4.5 c.c. of saline suspension, followed about 10 to 15 days later by a massive dose of a heavy suspension into the same place; the second, 19 days before with 140 mg. in 3.5 c.c. of saline suspension into the left groin. The first animal received definite but relatively sligh compression. When the compression of the kidney was tried on the second animal the organ slipped away so readily that one could not gauge the amount of pressure or trauma. Fearing that not enough trauma was used, ether was given and its kidney so firmly compressed that in slipping away it was torn from its attachments and formed a freely movable mass which did not enlarge.

The first guinea pig died 2 months after the compression of the kidney and showed practically only omental tuberculosis. The kidney was represented by a definitely enlarged, greyish renal mass made up of a thick fibrous sac within which much cheesy, necrotic material showing abundant degenerated leukocytes but no tubercle bacilli were found surrounding the ashen-colored pulpy, necrotic kidney proper. Sections showed complete infarction of the kidney, but the very thick fibrous sac was lined by the persisting renal tissue and here and there in the outermost portions definite tubercles were found. They were not present in the kidney proper and may have had local origin from the tuberculous omentum.

The second animal died after 38 days. The traumatized kidney was represented by a very small thick lima bean-shaped, brownish-yellow, hard mass situated very low near the bladder. On section, it presented a greasy, infarcted appearance and microscopically no living renal tissue save the pelvis and thick capsule was found. No tubercles were found. This animal showed extensive tuberculosis of the other viscera butl ike the first pig, the opposite kidney showed no tubercles. These experiments on the guinea pig kidney are modified for three reasons: The injury was too severe, bringing about infarction which resulted from the interruption of the blood supply so that bacilli could not be carried by the ordinary route. There was as a result a marked fibrosis in any remaining living tissue which may have retarded tubercle formation. Finally, the first animal was sensitized by the preliminary injection of a small dose succeeded by a relatively enormous quantity (entire 1 month's growth on glycerin-broth in 125 c.c. Erlenmeyer flask).

In the experiments in rabbits and guinea pigs, compensatory hypertrophy of the kidney did not render it more susceptible to infection. In one rabbit inoculated subcutaneously, nephrectomy of the left kidney to prove the absence of tubercles, did not lead to tuberculosis of the right kidney. This may have been due to absence of bacteremia but the guinea pig experiments do not have this objection.

BACTEREMIA AND BACILLURIA

In acute generalized miliary tuberculosis and in phthisis tubercle bacilli have been found with comparative ease in the blood and urine in smears, cultures and by guinea pig inoculations. Their slow growth, rapid incarceration in the tissues and excretion never allow them to accumulate in great numbers in the blood. Developmental and involution forms vary in tinctorial and pathogenic qualities, and there is perhaps something in the view that attenuation sometimes occurs in the body of the host. Demonstration of tubercle bacilli in the blood is consequently most difficult in the average case.

Experiment V. Inoculations of large quantities (20 mg. in 10 to 12 c.c. of saline solution) of bovine tubercle bacilli intravenously in rabbits caused their appearance in the blood films of the opposite ear vein at once and the continued excretion of the bacilli in the urine from the earliest period (2½ hours) tested. No concentration was used. Similar inoculations of human bacilli in rabbits and guinea pigs yielded entirely negative results thus far. Blood was not tested by inoculation or culture.

The possibility that many cases of mild indisposition, with or without fever, represent showers of tubercle bacilli in the bloodstream cannot be denied. If all vestiges of tubercle may vanish there doubtless occurs a local tuberculosis which is not recognizable, and for the same reason there is also a generalized tuberculosis which leaves nothing in its wake. But recognizable local tuberculosis probably never occurs without some generalized infection which may not be demonstrable.

One virulent tubercle bacillus may produce tuberculosis through invasive power though no one would expect it to produce even a single tubercle without proliferation. Such proliferation with cell migration causes tubercle bacillus migration. Theoretically local tuberculous infection is possible but such infection is only of academic interest. It is unnecessary to explain a generalized miliary tuberculosis by a coarse mechanical rupture into a large blood vessel, though this is a common finding. The ruptured active focus contains myriads of bacilli in clumps [Haythorn (17)] which are more effective in producing tubercles. There is too much mechanical interpretation of tuberculous disease all the way from considering the incitor itself as evoking a foreign body granuloma to this leak of a seething focus and, finally, the supposed cure by encapsulation. While these observations are quite correct they represent the final stage. What preceded the rupture of the focus can only be surmised. By comparison with less severe cases it appears that bacteremia may have existed in mild degree, forming perhaps small tubercles in the liver or spleen before the onslaught of clumped bacilli emptied into the circulation.

The same general condition which lights up the largest old lesion does likewise to the smaller lesions. If they are of the same age the activity may be identical, and if there is any appreciable activity the fibrous wall will probably become sufficiently vascularized to cause a certain degree of migration of tubercle bacilli. These are so few and far between that tubercles occur only where they are held up passing through such organs as the pancreas, thyroid and muscles but held up in the spleen, liver, lungs and lymph nodes. Even when they are held up tubercles may not be found.

Generalized infection in children is frequently seen but recovery takes place. Tuberculous meningitis, which indicates generalized infection, is not necessarily fatal (18). Walsh (3) has found tubercle bacilli in urine in 82.5% of cases of tuberculosis of the lungs but in 43% definite tubercles were found in the kidneys. If he had included questionable tubercles which had partly or wholly healed the percentage would become much greater. How many scars did he unavoidably overlook, and how many tubercles had been entirely absorbed? Scars were found (focal interstitial nephritis), in 77%, and in 59% of non-tuberculous cases!

SUMMARY

1. Strictly local tuberculosis has not been produced in unvaccinated animals.

2. Even particulate matter is transported in the bloodstream after subcutaneous and intraperitoneal inoculations.

3. The inequality in the distribution of tubercles results *apparently* from purely mechanical conditions in the various organs.

Direct inoculation of the kidney in the guinea pig causes local tuberculosis without tuberculosis of its fellow.

4. Tubercles may heal without leaving any vestiges.

5. Trauma, well recognized as a contributory cause of local (clinical) tuberculosis, did not cause tuberculosis in the "immune" kidney of two guinea pigs previously infected. This work must be continued.

6. Bovine tubercle bacilli cause a continued septicemia with tubercle bacilluria in rabbits.

7. There is abundant evidence of the frequency of non-fatal generalized miliary tuberculosis. This is found in partially or completely healed lesions at autopsy which are themselves easily overlooked.

8. The fact that tubercles can be completely absorbed leaves no criteria by which to determine the frequency of generalized infection at autopsy.

9. There is no tissue immune to tuberculous disease. But we can safely assume that tubercle bacilli may produce no recognizable lesions particularly in the case of "sensitized" animals.

10. Tuberculosis closely resembles typhoid fever and pneumonia in which there is a bacteremia with usually primary local lesions that generally undergo complete resorption. If any of these infections become chronic it is only reasonable to expect more productive inflammation with consequently more scarring and, therefore, more tell-tale evidence of infection.

11. Tuberculosis is being too generally regarded as local. Clinically considered it may be local, but we are losing sight of its general character.

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DISCUSSION

ON PAPERS OF DRS. MOHLER AND BRUECKEN

Dr. Alexander Armstrong (White Haven): I was hoping that Dr. Mohler would say that, in his experience, tuberculosis of the peritoneum, if not rare, has been at least infrequent. When I first had my attention called to this form of tuberculosis, I took an account of stock and found that at White Haven where we average two hundred cases of pulmonary tuberculosis, I could not discover at present one diagnosis that had been made of tuberculosis of the peritoneum. So I think that, at least as a medical disease, we might say tuberculosis of the peritoneum is rare. We must admit, however, from reading the literature on the subject, that there is such a thing as primary tuberculosis of the peritoneum; but from Dr. Mohler's experience, most cases of this condition are of a secondary character. Practically all of the cases he has mentioned in his paper have been secondary to ileocecal trouble. Surgeons tell us that they take out tuberculous appendices very often, and find ulcers in the intestines. I wish Dr. Mohler would tell us why the peritoneum is not more frequently involved in tuberculosis. The tubercle bacillus is such a ubiquitous germ; every organ of the body is invaded frequently. How often the pleura, meninges and pericardium are involved as a secondary process, and how infrequently the peritoneum! It may be that this is because we do not recognize the condition. We have had eleven autopsies within the last year, and in three of these we found distinct ulceration of the intestines in various parts. In one, there were forty ulcers in different portions of the intestines. In none, however, was the peritoneum involved macroscopically.

It may be said that the peritoneum might have been involved microscopically. I looked up a report of the Phipps Institute for 1904. They did good work there. When they went into a thing they did it thoroughly. They had fifty-five autopsies; and of these, forty-six subjects had a normal peritoneum. Two had general, and one circumscribed peritonitis; and one, ascities. Of these fifty-five cases, eighteen had ulcers of the intestines. Yet how infrequently do we find this condition during life! We often do not seek for it, but find it at autopsy. Then, from the histories, we find that these ulcers had not produced symptoms. The patient did not die of tuberculosis of the intestines. Some patients do die of it, but there is no trouble in diagnosing the condition in these cases. I have, therefore, come to the conclusion that tuberculosis of the peritoneum is a benign affection. If the patients have it, they get well. I am excepting the cases that are secondary. I want to emphasize the fact that it is not always a surgical condition. Medical measures should be tried first. One medical measure that should be tried, in addition to what Dr. Mohler has recommended, is heliotherapy. The Saranac authorities now say that instead of resecting the intestines, we should try sun therapy.

Dr. Samuel R. Haythorn (Pittsburgh): Dr. Bruecken has presented so much interesting material that it seems impossible to discuss it fairly in a few minutes. The occurrence of tuberculous arthritis of a chronic nature as the outstanding lesion in a patient not otherwise obviously tuberculous indicates that tubercle bacilli are occasionally distributed throughout the patient's body without the production of a general miliary tuberculosis. It is also generally conceded that tuberculous epididymitis and prostatitis arise from tubercle bacilli excreted through the kidney rather than by local extension from the outside. These observations, supported by experiments such as Dr. Bruecken has reported, indicates definitely that tubercle bacilli may occur in the body and be excreted in the urine without injury to the kidney. Koch apparently realized this possibility for he is quoted by Strümpel as believing that tubercle bacilli could be taken into the body and eliminated from it without injury and that this was possible because of the extremely slow growth of the organism.

Tubercle bacilli are distributed throughout the body in at least two, and probably three ways: (a) Directly as bacilli or clumps of bacilli in the blood stream; (b) within phagocytes through the lymph channels; (c) probably within phagocytes in the blood stream. A case of tuberculous aneurysm of the common iliac artery which I reported several years ago illustrates the first means of distribution very well. The kidney contained many tubercles and also numerous emboli of tubercle bacilli without any reaction about them. At that time I attributed their apparently innocuous nature to the exhaustion of the patient's defensive mechanisms, which I believed were no longer able to react to toxic stimuli of the tubercle bacilli. It is possible, however, that these masses of bacilli had reached the kidney only a short time before the death of the patient and had not had time to excite an inflammatory reaction.

In a paper read at the American Pathologists and Bacteriologists in 1916, which has not been published, Dr. Lacy and I presented evidence to prove that when suspensions of tubercle bacilli and India ink were injected into the groin of guinea pigs, not only local tubercles were formed but secondary tubercles developed in the anterior mediastinal lymph nodes as well and these secondary tubercles were formed from cells containing both India ink pigment and tubercle bacilli. In other words, the bacilli and pigment were phagocyted in one portion of the body, carried to another and held in place until a second crop of tubercles were found. I have also seen India ink granules in the blood smears of a guinea pig which had received a large dose of serum mixed with India ink so that it is probable that tubercle bacilli may also be carried in this way. It would seem that tubercle bacilli within endothelial phagocytes are more dangerous to the body than when they are free in the blood stream because they are retained longer, so that here we have a possible explanation of the relative immunity of different organs. The lungs, liver, spleen and lymph nodes, which are known as the filters of the body, abound in large phagocytes at all times. On the other hand, the normal kidney, pancreas and striped muscle, all of which are known as relatively immune to the tubercle bacillus, are also practically free from these phagocytes. Again the normal meninges contain some of these cells at all times and are relatively susceptible to tuberculosis, while the brain substance which contains none of them is usually free. When solitary tubercles of the brain develop it is in the neighborhood of the vessels where these cells are often present. While it is not the only thing, I believe that we have here a possible anatomical reason for a part, at least, of the relative immunity of the various organs.

Whether miliary tubercles may develop and disappear without leaving any evidence in the human, I am unable to say. That larger miliary tubercles commonly develop and heal with fairly typical scars is an old story. It is possible that endothelial phagocytes may be figuratively compared with many public service bodies which actually bring harm though working with the best of intentions.

Dr. E. H. Funk (Philadelphia): It seems to me that tuberculosis of the abdomen as seen by men in general hospital practice differs somewhat from the tuberculosis of the abdomen as seen by those caring for patients in tuberculosis sanatoria. In the former practice, as exemplified by the experience of Dr. Mohler, the pulmonary symptoms are slight or absent, the symptoms referable to the abdomen dominating the clinical picture. When I was Chief Resident to the Jefferson Hospital some years ago and saw all the patients sent into the medical and surgical services, I was struck with the frequency with which cases of acute tuberculous peritonitis were considered as acute appendicitis, cholecystitis, intestinal obstruction, or some other acute abdominal lesion. The diagnosis of tuberculous peritonitis was revealed only by operation.

In a postoperative review of these cases, searching for a lung focus, one was impressed with the infrequency of local or general symptoms suggesting tuberculosis and the fewness of signs suggesting anything other than a questionable apical fibrosis. Fortunately in these patients with acute tuberculous peritonitis, the exploratory incision is a beneficial one therapeutically. I have in mind a nurse who had been considered in perfect health while under our observation for a number of years. She was seized with acute abdominal symptoms suggesting acute appendicitis, for which she was admitted to the surgical service. Operation revealed the peritoneum studded with an enormous number of miliary tubercles. The abdominal incision was closed, convalescence was prompt and after some persuasion she submitted to a vacation and rest of several months. She then returned to nursing and has been actively engaged in the work during the past three years. The literature contains recorded cases where subsequent examination of the abdomen at necropsy many years later revealed no evidence of the previous tuberculosis. Such an instance occurred in the experience of the late Dr. Hearn.

I am most interested in Dr. Bruecken's work. Tubercle bacilli are unquestionably spread more frequently by the blood stream than we have any idea of. Our conception that the miliary tubercle is essentially a progressive and extending lesion is not borne out by close study. Of course in many instances it is, but not invariably so. Some time ago Dr. Coplin showed me a microscopic section of the liver in which he was able to demonstrate histologic tubercles of three distinct ages, evidencing so to speak, three successive hematogenous implantations of the tubercle bacillus. In one group of tubercles the recent tissue reaction was that which we associate with a recent infection. In another group, definite evidence of healing indicated an older lesion, while in a third group the tubercles were markedly fibrotic. Evidently the liver had been successfully implanted three times with tubercle bacilli from the blood stream.

Dr. Lawrence Litchfield (Pittsburgh): I wish to report two cases in this connection. When the American Medical Association met in Detroit, there was exhibited an x-ray plate that some of you may remember having seen. The abdomen had been plated, and found covered with calcified shadows like healed tubercles. The plate had been made in a search for evidence of gall-stones in the case of a woman of forty-five, who claimed that she had never been ill since she had the measles in early childhood. The plate was made by Dr. E. A. Merritt, then of Council Bluffs, Iowa, now of Washington, D. C. Some years ago, my stenographer developed evidences of gall-stones, and I had a plate made of her abdomen. This plate was exactly like the one shown at Detroit by Dr. Merritt. The entire radiogram, from above the waist down to the pelvis, was covered with macular shadows as thickly as the macules could exist in a case of nonconfluent measles. My stenographer had had a prolonged case of what was diagnosed as typhoid fever a number of years before. She was unable to work for about one year following that illness. She became perfectly well shortly after the attack on account of which I had the plates made, and is still well and acting as stenographer for someone else.

In neither of these cases was there any clinical evidence of tuberculosis, yet the evidence of healed disseminated tubercles found over the greater part of the body seemed indubitable; and it is interesting, as showing that these tubercles may heal with calcification in some cases, while in others, as brought out today, they may heal without leaving any trace whatever of their having existed.

Dr. Mohler (in closing): I am very much pleased to have Dr. Armstrong discuss my paper because he has in a sense emphasized what I tried to bring out. Most of the cases of tuberculosis of the peritoneum are not seen in well developed or well advanced active cases of pulmonary tuberculosis. Dr. Armstrong sees patients with pulmonary tuberculosis in sanatoria. My experience is largely confined to patients seeking treatment in a general hospital. In going over the records of the Jefferson Hospital for the past ten years, I discovered that eighty-five patients had been treated for tuberculosis of the peritoneum, in the majority of instances the diagnosis having been verified by laparatomy. Only three of the patients had had sufficient symptoms and physical signs to justify a diagnosis of active pulmonary tuberculosis.

The histories of the patients that I consulted or personally studied were those in which in more than eighty-five per cent. of the cases consulted the physician because of trouble in the abdomen. They date the beginning of their symptoms back from one to twelve weeks.

I remember one of the pupil nurses in the hospital who was taken ill very suddenly. She had always apparently been in good health, and we never suspected that she had tuberculous peritonitis. She was operated upon for intestinal obstruction and widespread tuberculosis of the peritoneum was discovered, a condition similar to the cases that Dr. Litchfield has just described. She resumed her course in training following her recovery, and tthere was no evidence, before or since, of tuberculosis, except that localized in the peritoneum.

The question was asked as to why the peritoneum is so seldom infected in generalized tuberculosis. I do not know what reasons have been advanced to explain or answer this question, but it appears to be a fact that tuberculosis of the peritoneum is usually of less consequence than tuberculosis of the pleura. It might be that the peritoneum has a greater protective power against all infections because it is exposed to greater dangers through the many organs it surrounds.

My only excuse for offering this paper on what appears to be a common subject is that a large number of mistakes are made in the diagnosis of this disease. The condition is not always easily recognized and is present often when it has not been suspected. I have not presented anything new, but, like a paper on acute pericarditis that was read before this section last year, have emphasized some things that we all know, but do not always think of.

Dr. Bruecken (in closing): I am pleased to hear this clinical corroboration of the possibility of complete resorption of the tuberculous lesion. There is no question about the frequency of recovery from generalized infection. Tuberculous meningitis has practically always been regarded as uniformly fatal though we have definite proof of recovery. There are about 38 cases of recovery from tuberculous meningitis reported in the literature. This condition is probably invariably associated as a concomitant manifestation with generalized infection. Even when it has rare local origin there is doubtless a secondary generalized infection. The relatively slight exudate and usually very small tubercles in the meninges could readily heal without marked alterations unless it were of very chronic nature.

Dr. Haythorn has indicated the probable importance of the phagocytic cells in the distribution of the tubercles. His own work with these cells, especially in relation to the tubercle bacillus, is most instructive.

CONCERNING THE ASSOCIATION OF NEURORETINITIS IN EACH EYE, WITH A UNILATERAL EXTERNAL OPHTHALMOPLEGIA: A CASE REPORT*

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When your chairman requested a contribution from me to the Section proceedings, my mind reverted to a bit of driftwood that was brought into the wards of a great city hospital—one of those temporary repositories of the flotsam and jetsam of our city life. The case was admitted during the period of my winter absence in the South. Upon my return, my touch with it was entirely ophthalmologic and consisted of little beyond a confirmation of my associates' findings, but it occurred to me that it contained ophthalmic features that were sufficiently unusual to merit some effort at elaboration.

When I attempted to find the patient who, against the advice of the attending physician, had been taken away from the hospital during my recent summer vacation, in a condition which was recorded as improved (and from some of the clinical signs this entry was justified), I learned that, most inopportunely from my viewpoint but happily for her, she had died a few weeks following the institution's last touch with her. Hence ended a study that from an ophthalmic viewpoint interested me greatly, in the presentation of symptoms of a fugacious right-sided external ophthalmoplegia with a double neuroretinitis, the latter lesion being greatly accentuated upon the side of the temporary muscle palsy.

Through the courtesy of Dr. Arthur A. Hopkins of the Department of Medicine of the Episcopal Hospital, I was asked to present the ocular findings in the case of a young colored girl of thirteen years, who claimed to be single, and who was admitted to the medical wards March 24th of the present year. Her family consisted of father, mother and one sister, all living and well. The personal history previous to four months before her presentation for treatment, barring a few vague symptoms and the oncoming of menstruation at eleven years of age, was negative. On December 17th she had a violent vomiting spell, which her local physician regarded as due to gastritis. From this period to that of her admission, there was a history of pain in the eyes and head which resulted in a refraction test by a druggist optician—a new adjunct to a pharmaceutical equipment. The right eye was said to be markedly defective and during the two weeks preceding admission was thought to be almost blind. During this latter period violent occipital headache was complained of, especially night and morning. On the day preceding admission she had a first convulsion, characterized by a marked contracture of hands and feet and beginning, according to the mother, in the right hand. She had three convulsions the day of admission and her gait was staggering. The chief complaint for which she was brought to the institution was her convulsions.

The above condensation is collated from the notes by the then resident, Dr. Woodson. Dr. Hopkins found the appearance of the face, scalp and ears negative, and likewise the heart, lungs and abdomen. Teeth were in good condition. There was an exudate upon the inner surface of the cheek with suggestion of superficial ulcer. Babinski positive. Knee jerks positive on right side, definitely diminished on left. Biceps brachii positive on both sides. Apraxia positive on left, normal on right. Ataxia on left side. Right eyelid was moderately ptosed, with marked limitation of globe movement in all directions. Pupil reactions not impaired. Patient complained of frequent attacks of pain in right arm extending from elbow to thumb, and often to right leg. These attacks which are recorded as occasional, were usually followed by a temporary loss of consciousness.

In the present study tuberculosis, enterogenous intoxication of intestinal origin, gonorrhea, the various other infections and the toxic products from a diseased tooth, tonsil, skin and uterine cavity were excluded.

The child was in the hospital for 73 days, from March 24th to June 4th. During this period the temperature range in the morning was from 97.8° to 99.8°; the evening from 99° to 101°, being rarely under 100°. In other words, a low grade fever was maintained during the latter half of the day. The respirations had only a range from 20 to 28 per minute during the entire period. Blood pressure—systolic 108, diastolic 80. The urine output varied from 90 to 1,800 C.C. It contained a trace of albumin, and as a rule contained but few leucocytes. The blood picture upon entrance showed: red 4,260,000, white 4,800, hemoglobin 70%, polynuclear 5%, mono 6%, transitional 4%, lymphocytes 32, eosinophiles 1. Three Wassermann examinations were recorded, two blood, one spinal. These were done at weekly intervals during the first month of her hospital stay. All three were negative. In the spinal test 25 cc. was obtained "under pressure." The cell count was four. Culture showed no growth. Globulin negative—reduces Fehlings. Differential count shows a preponderance of polys.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

On April 20, 1921, Dr. John Gallagher made a nasal and aural examination with the following result: Left nostril—turbinates normal. Probe entered left sphenoidal sinus without difficulty and was rotated in the cavity. No pus nor other secretion present. Right nostril—marked congestion of middle turbinate, with a moderate sero purulent discharge from the middle meatus. Entering the sphenoidal sinus was much more difficult. A feeling of bogginess with a scratchy sensation indicative of bone necrosis was noted, with a definite limitation of rotation of the probe tip. The presence of the probe in each sphenoidal sinus was confirmed by x-ray examination. Right posterior mastoid gland was palpable. Right side of face and thyroid region showed an increased puffiness.

April 16, 1921. Examination by Dr. Gallagher: Ears—nerve deafness on both sides but more marked on left. Watch on right heard 18/40. Not heard at contact on left. Spoken voice right ear, 10/20. Left ear, 4/20.

April 20, 1921. Right ear heard 512 c—6 inches. Hearing same for left ear—2 inches. Barely audible C 4—2,048 left ear. Right ear audible—4 inches. C 64 audible both ears, especially right. 512 Weber to right. Bone conductions markedly diminished both sides. Bone conduction duration—12 seconds left side. Bone conduction duration—15 seconds right side.

Concerning the aural examination, in the absence of Dr. Gallagher I have asked my friend, Dr. B. Alexander Randall, Professor of Otology at the University of Pennsylvania, to express his judgment regarding the diagnostic significance of the findings, and he has kindly favored me with the accompanying reply: "Not knowing the normal hearing or duration by bone conduction of the forks used, we can only accept his conclusions, which would seem consistent and doubtless correct. The loss of hearing is rather parallel for the various tones, suggesting lesion of the nerve trunk rather than of the end apparatus and by generalized, not local pressure, as does the escape from injury of the facials, though these are usually less vulnerable ('portio dura'). The right sphenoid is suggested as involved (cause or effect) in the lesion; absence of cavernous sinus disturbance speaks against a large lesion, the left neuroretinitis may, like the VIII, be from diffused pressure. The thickness of the pons separates the sellar changes from the fourth ventricle and aqueduct and V seems to have escaped; so a large or infiltrating lesion seems excluded. Sphenoid empyema and caries on the right, or breaking-down gumma of this region if luetic stigmata were present, seems fairly to cover most of the symptoms. My most nearly similar cases had either ophthalmoplegia or neuroretinitis, but not both together."

Of several x-ray examinations made by Dr. R. S. Bromer, that made upon April 1, 1921, indicated a well marked erosion and flattening of the sella turcica, with encroachment on the sphenoidal sinuses, evidently due to pressure. The remaining portions of the skull showed no sign of intracranial pressure. On April 11th, the report confirmatory of the above, also regarded the anterior and posterior clinoid processes as completely absorbed and the body of the sphenoid much eroded. The picture was regarded as typical of an appearance induced by pressure upon the bones of the skull by a new growth. No opinion was expressed as to its being intra- or extra-sellar.

An examination of her eyes was made by my assistant, Dr. E. B. Mongel, upon March 31st. Vision in O. D. hand movements at 6 inches more definitely recognized in the upper nasal field. Left vision 15/40. Upon dilatation of right pupil a marked swelling of nerve and surrounding retina was noted, which swept well into the periphery in all directions, the summit being 8 diopters, suggestive of a widespread detachment of retina, with a hemorrhage at lower edge of disc. The right papilla and retina were a peculiar gray-white color without intense vascularity, suggestive, according to deSchweinitz, of direct pressure upon the tracts and chiasm. O. S. showed a moderate swelling of the nerve head and retina, the summit being plus 4 with no other lesions.

The writer personally examined the case upon four occasions during May, confirming the fundus appearance noted and observing an almost complete external ophthalmoplegia in O. D. with no involvement of the accommodation mechanism, but with a moderate ptosis. There was an entire absence of any muscular palsy in the left eye. The ocular picture is then a right-sided, almost complete ophthalmoplegia externa, with a huge neuroretinitis upon the same side, with an approximate three millimeter to 8 diopter elevation of the retina, and a much lower grade neuroretinitis of O. S. the disc summit being plus three.

She was mentally heavy, and a perfectly accurate field was impossible, but as nearly as could be determined it suggested a quadrant hemianopsia in O. D. with a moderate concentric contraction for form and color in O. S. The ophthalmoplegia was present for approximately eight weeks. With its disappearance there seemed to be *some* mental clearing, and it was at this somewhat encouraging period that she was removed from the hospital to her home.

Despite the negative findings, Dr. Hopkins felt that such an ensemble was most likely luetic in origin, and the treatment she received was mainly anti-syphilitic.

Both from a clinical and x-ray viewpoint there was an evident and serious involvement of the right sphenoid, associated with absorption of the clinoid processes and erosion of the sphenoid body, and with an outflow of seropurulent fluid from the sinus. Under such circumstances the route of ocular involvement, as is perfectly well known, may be by continuity, by way of blood vessels, by way of lymphatics, and by way of the lymphatic sheathes of the nerves.

The presence of a rapidly developing external ophthalmoplegia with fever and convulsions, naturally draws attention to the third, fourth and sixth nerves, and likewise to the third and fourth ventricles and to the aqueduct of sylvius. DeSchweinitz suggests that if the intraocular muscle escape there is strong presumptive evidence that the disease is nuclear, but Mauthner has pointed out that this is not a characteristic sign. Siemerling concludes that nuclear disease may be inferred from external ophthalmoplegia if it is not maintained that muscular pasly *must* manifest itself as an external ophthalmoplegia.

"On the other hand the intimate association of the nerves which supply the ocular muscles with the outer wall of the sphenoid will readily explain in part the muscle disturbance, and disease of the sphenoid is regarded by some authorities as the most frequent cause of muscle involvement of sinus origin.

"In acute cases pareses or paralyses are occasioned by direct inflammatory infiltration of the long flat belly of the muscles themselves as they lie close to the sinus walls, or by involvement of the nerves as they enter the orbit.

"With reference to sinus disease and an associated toxemia, especially of the posterior group of cells, whether the anatomic contour is normal or the pneumatization anomalous, the writer said upon another occasion that the presence of central scotomata, narrowed visual fields, large dark tortuous veins, hemorrhages in the retinal fibre layer or a definite neuroretinitis, several of which symptoms were evident in our case, may be present and yet it may be impossible to demonstrate sinus disease."

On the other hand, all the above symptoms may be present in association with disease of one of the paranasal sinuses, and it is not by any means easy to say they were caused by it, as both the sinus and ocular disease were often associated with, and probably caused by the same systemic toxemia. We have likewise quoted Bryan's opinion: that the presence of bilateral nerve involvement may be explained by transference by way of the chiasm, without necessarily indicating the presence of a bilateral sinusitis. In the case before us only one sphenoid was involved, and upon this side the fundus lesion was much the more extensive.

We are all familiar with the epochal work of our distinguished guest, Professor Van der Hoeve, whose early pronouncements and their further development and confirmation by de Kleyn, set us at work to study the scotomata which have become associated with his name, the so-called peripapillary variety. And while we do not subscribe, as I presume he does not, to their presence as absolutely pathognomonic of posterior sinus disease, the studies have been of the greatest value in stimulating our own work in these associated conditions, and in many instances making diagnoses possible that would otherwise be most obscure.

In the case before us it happened that the sinus involvement was demonstrated by two methods without the field studies, which could not be accurately made owing to the patient's mental condition. The ocular picture here drawn is, in the author's judgment, due to an intracranial growth, and the sinus disease is, in this instance, secondary. So many of the ocular symptoms could be explained by sinus disease alone that the author was tempted to emphasize the importance of this association. The convulsive seizures, the x-ray findings and the intensity of the intraocular process on the right side, point rather to an intracranial neoplasm.

In view of the importance of the findings, the notes of the case were submitted to Dr. Charles W. Burr, Professor of Neurology of the University of Pennsylvania, who is the consulting Neurologist to the Episcopal Hospital. Dr. Burr's opinion was in accord with the conclusions reached. He advised the author that practically every colored child brought to his service at the Philadelphia General Hospital, who was over 13 or 14 years of age, was found to have syphilitic disease; and he felt that although the Wassermann findings were negative the leutic treatment accorded with his own judgment, and that the growth was probably gummatous in character. Dr. Burr had never seen a case showing exactly this combination of symptoms, and felt that one of the most important lessons to be deduced was the necessity of sinus investigation in any obscure head symptoms. That a subsequent study was impossible, as was a pathological confirmation after death, the writer profoundly regrets.

DISCUSSION

Dr. Peter N. K. Schwenk (Philadelphia): Dr. Ring has so thoroughly and well stated the conditions in his interesting case of external ophthalmoplegia associated with extensive neuroretinitis, that there is naught left for me to comment upon. The only question is, was the ophthalmoplegia external of nuclear or basal origin. Generally speaking, ophthalmoplegia externa in the majority of cases is of central or neuclear origin, but since Dr. Ring's findings were erosion of the sphenoidal walls, it appears to me that the third and sixth nerves were affected at their exit from the base of the brain, and the nerve trunks were encroached upon by the sphenoidal degeneration.

Dr. Ring is to be congratulated upon his careful and exhaustive study (which is his characteristic) of this case. Now, in order that some discussion might follow this unique case, I shall take this opportunity of presenting two cases, also fugacious. I beg permission, therefore, also to report the following which to me has opened a new field for observation. On March 9th Mrs. J. N. Mc., age 45 years, very robust in stature, but healthy in appearance, mother of five healthy children, came to my office complaining of inability to read. External ocular appearance normal, also eye grounds negative, excepting refractive error and general asthenopia. Right eye vision 20/70 + 1½ = + 50 Cyl. Ax. 90° = 20/15 M. Left eye vision 20/70 + 1½ = 20/15 M. Full correction was ordered, with the + 2 bifocals added for near.

August 6, 1914, patient reported, while at seashore began having pain in left eye for six weeks and was unable to read with left eye. Cornea and pupil normal and with the Oph. media clear; disc margins blurred, vessels tortuous and required a + 275 glass which gave her 20/15 M. On September 9th pain continued rather more pronounced than on last visit. The Oph. showed marked swelling of disc, veins and arteries tortuous with surrounding edema of disc, but with a + 3 vision was 20/15 M. On September 23d right disc showed some swelling with surrounding edema. Swelling of disc = + 6 or 7. On October 4th I requested the family doctor and husband of patient to come to my office with a view of a consultation. I requested family doctor to have the urine examined, a blood test made, etc. The right eye then showed + 2 with a + 50 Cyl. Ax. 90° = 20/15 M. Left eye + 3½ = 20/15. The right eye now showed pronounced swelling = to + 3 of disc. I then referred her to Dr. ———, after having all the data of excretions made. But the family doctor conveyed the impression to the husband that I regarded the case to be of specific origin and therefore felt hurt, and took the patient to Dr. ——— for consultation without mentioning how patient came to him. The doctor continued the case until blind, after which the husband resorted to osteopaths and neuropaths, etc., who exercised their cult to end in failure. I regarded this case to be a tumor of the brain, but this finding was not concurred in by consultant, which was told me by husband. I last saw the patient at request of husband and found each disc swollen to + 8 or more. The patient died March 17, 1917, three years after having first seen her. I endeavored to get an autopsy, but as the patient was of Catholic faith was promptly refused.

The point in this case is the marked increase of hypermetropia in right eye in a case of neuroretinitis with a less degree in left. For this reason I deemed this case worthy to be presented conjointly with Dr. Ring's unique patient.

Another case came under my observation this last September at Wills Eye Hospital, suffering with a violent conjunctivitis, from which he came to be relieved. In addition to this he had paralysis of left external and right internal recti muscles, and paresis of right external muscle, which had existed since childhood and therefore was congenital.

PERSONAL EXPERIENCES WITH THE DIMITRY MODIFICATION OF THE MULES OPERATION*

FRANK C. PARKER, M.D.
NORRISTOWN, PA.

The procedure of implanting a ball, be it gold, glass or of other material, is of course, not a new one. You are all familiar with the various operations employed at the present time, designed to form a movable stump for the prothesis. Of these methods the Dimitry modification of the Mules operation, as described in the *American Journal of Ophthalmology*, September, 1919, has been selected as the subject of this paper.

The indications for the Dimitry operation are primarily, the formation of a proper stump, and giving the correct amount of filling-in to replace the lost eye, at the same time protecting against sympathetic complications, the latter a bad feature of the Mules operation unless an opticociliary neurotomy is done.

My own experience in over twenty cases has been that fresh injuries, with not too great laceration of the globe, are admirably adapted for this procedure. Here we have good healthy tissue and, barring infection, should look for a retention of the introduced ball. However, my greatest surprise was in finding how nicely an old phthisical globe with bony choroid adapted itself to the operation. Bleeding was not troublesome and the scleral shell retained the ball in an admirable manner, showing no signs of giving way after a year's retention.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

As a matter of curiosity I implanted two balls in eyes the subject of acute panophthalmitis exhibiting the typical picture of greatly chemosed conjunctiva, pus within the globe, etc. These two cases expelled the balls in about a week's time, healing taking place in no unusual manner. Here the panophthalmitic eye expressed a dislike for retaining any introduced ball due no doubt to the macerated tissues so lowered in vitality as to give way before the stitches. Even here a distinct gain was made as shown later by the socket. All the muscles being left intact with their insertions to the scleral shell (now shrunken), gave a much better cushion upon which the prothesis rested than would have resulted from the ordinary enucleation.

The gain in motility was distinctly noticeable. Right here it might be mentioned that the Dimitry operation minus the insertion of the ball as advised by Græfe years ago, before the Mules procedure came into vogue, would be an advantageous procedure over a straight enucleation. Muscles attached to the greater part of the sclera with nerve head severed, would give a well-filled-out, movable base for the support of an artificial eye. Hence, where a ball could not be inserted this procedure would seem to be in order. Again, should a Dimitry be attempted and the ball be expelled, the patient is still better off than he would have been had the usual enucleation been carried out.

In general it might be said that any eye with enough sclera to offer sufficient covering for a ball, and not the subject of infection, offers an opportunity for the Dimitry operation. Naturally, an eye showing any growth such as a glioma, sarcoma, etc., would not enter into consideration for safety's sake. Neither do I think the extremely aged should be put through this operation when an enucleation can be done in two or three minutes under gas-oxygen anesthesia.

As to the operation itself, the form of incision seems to be a matter of interest. From the excellent sketches appearing in Dimitry's original article, the novice would gain the impression that he must be a skillful tailor in order to so fashion the flaps of sclera as to cover the inserted ball and at the same time make a snug fit. As a matter of fact a snug fit over the ball as recommended in the article, is not to be desired to my mind. A loose fit is preferable to allow for contraction. The flaps as shown in the original article are not necessary and only complicate matters. I have never employed them, starting my first operation and continuing the succeeding ones with only a small horizontal incision to the temporal and nasal sides of the original opening, to enlarge the aperture sufficiently for evacuating the sclera contents and introducing the ball. I think this gives a much stronger closure than is obtained by four separate flaps. Right here I might suggest that any trimming of the sclera thought necessary, had best be done after insertion of the ball rather than before, else you may find a lack of sclera with which to cover the ball.

My own procedure has been to puncture close to or at the limbus with a Græfe knife, rather than so far back as described by Dimitry. After circumcising the conjunctiva and undermining well back, one blade of the curved scissors is introduced through the puncture and the cornea circumcised by cutting completely around the limbus. A snip to the temporal and nasal sides, horizontally, of about five millimeters, gives sufficient room for evacuating the contents of the globe and removing all retina, choroid, etc. Removal of the globe contents is easily accomplished by pressure of the two index fingers placed upon the ball at the nasal and temporal extremities of the wound, thereby forcing up the viterous which is carried away by bringing the fingers together. Any contents remaining can be removed by a piece of gauze wrapped about a pair of forceps.

The scleral shell having been cleansed as thoroughly as possible, an attempt is made to control bleeding. I say "attempt" as the bleeding is profuse and most annoying notwithstanding Dimitry's statement that "any possible slight hemorrhage is easily controlled." Our northern blood must have a low degree of coagulability as I have found in the great majority of cases that the bleeding and oozing from within the scleral shell has been most profuse and annoying, and moreover is not easily controlled in spite of any pressure employed. About the time you think you have stopped the flow and have a clear field, oozing promptly starts again upon resuming your operation. The bleeding of course is not alarming, it is simply annoying as it obscures the bottom of the scleral cavity and covers up the very part through which you must make your incision for excising the nerve head. I think this point should be emphasized, bleeding and annoying bleeding is to be looked for, pressure or no pressure.

The nerve head has to be sought out and as the blood keeps filling up the scleral cavity which is now collapsed and not quite so beautifully distended and clean as shown by the artist in the original article, it is with difficulty that this part of the operation is carried out. Here is the most tedious step. One has to wait a short time to reduce bleeding by applying pressure with gauze. To overcome this difficulty, I have been employing a silver eustachian catheter or a glass medicine dropper attached to a Sorensen suction apparatus in common use by our nose and throat colleagues. This suction will keep the field clear while the nerve head is sought for and excised. Puncture through the posterior sclera a few millimeters from the optic nerve head is now in order, followed by introduction of the scissors and enlarging the wound. Cutting off the nerve through this opening, everting the sclera and completing the excision of the scleral button the centre of which contains the nerve head, is more easily accomplished than cutting the scleral button and excising the nerve afterward.

After excising the nerve head the scleral shell is thoroughly wiped with gauze, while everted, to remove any choroidal or other remains. Replacing the sclera the ball is now introduced. The incision is closed by the introduction of heavy black silk sutures spaced about three millimeters apart. My advice is not to use gut for suture material as it has no advantages and more often than not will give way. I have never employed gut for this operation but where I have seen it employed by my colleagues at the Wills Hospital the balls have come out a few days after operation. The sclera now closed, nothing further is done other than to apply the dressing. As to the conjunctiva, I let it rest in peace, no sutures being introduced to draw it over the wound, thereby shortening the cul-de-sac, and no sutures being employed to draw back the conjunctiva as directed in Dimitry's article, although the idea of deepening the cul-de-sac by so doing has merit. The field is now covered with bichloride salve and bandage applied. If you care to use ice you may feel that you are doing something, but personally, I have never felt that ice applied through a thick layer of bandage, gauze and cotton amounts to much. Rest in bed without annoyance from ice pads is all that is necessary.

Now as to reaction, one cannot expect to so traumatise the sclera, conjunctiva and region of the optic nerve entrance without some reaction. There is quite a little reaction. The lids become puffed out and on the whole when the bandage is removed for the first dressing, the appearance is one of an eye embracing a well developed attack of panophthalmitis. However, knowing that the swelling of the tissues is due to traumatism and not infection, there is no need for worry. The reaction begins to subside before the end of the week, wrinkles making their appearance in the formerly tense skin of the lids and repair rapidly takes place. I have seen no untoward result of any kind following the operation even in the two cases of active panophthalmitis.

It must not be understood that I am making a plea for the introduction of balls into all panophthalmitic eyes. I simply state that I have implanted balls in two cases subject to this disease without any untoward effect other than expulsion of the balls. As far as healing was concerned, they healed as well as any of the others.

As to the size of ball employed, I usually prefer one of approximately fourteen or fifteen millimeters. Larger balls may be used with a resultant larger stump, but my objection to a large stump is that a re-formed eye cannot be employed, as the combination results in too great a prominence. As a consequence, a shell eye has to be resorted to with the result that it is with great difficulty that the shell can be removed by the patient for purposes of cleansing. It clings so tightly to the stump that it requires some effort to dislodge it. This, then, is my objection to the use of a large ball. Again, where the sclera has been so damaged as to prohibit a fifteen millimeter ball being used, common sense would tell us to employ a ball adapted to the size of the case in hand.

The results of the Dimitry operation have been most gratifying and the cosmetic effect compares most favorably with any other method I have tried or seen tried. I must add, however, that even though enthusiastic over this procedure, I have seen other results just as good. Only recently have I had under my care a patient whom you would not suspect of having in place an artificial eye and where an ordinary enucleation had been done some years ago by a colleague. You will agree, however, that a result of this kind is the exception rather than the rule.

DISCUSSION

Dr. J. Milton Griscom (Philadelphia): Any discussion of the Dimitry operation as described by Dr. Parker necessarily involves an answer to two questions: (1) Is any substitute for enucleation advisable? and (2) what substitute shall be chosen?

If we would eliminate to the last possible degree any chance of sympathetic ophthalmia, complete enucleation must be chosen. Retained foreign bodies in the globe, or cyclitis secondary to the incarceration or puncture of uveal tissue, almost certainly demands complete extirpation of the affected eye. There are, however, conditions under which the dangers of sympathetic inflammation are reduced to such a minimum that it would seem within the bounds of conservative surgery to adopt one of the substitutes for enucleation. I am aware that uveal tissue has been demonstrated microscopically in the scleral cup some time after extirpation has been carefully and thoroughly performed. Also there are cases on record of sympathetic inflammation following the Mules operation and others of this type. These cases, however, are so few that I believe we are justified in adopting a substitute for enucleation in properly selected cases.

The Dimitry operation has so far proved a most satisfactory procedure in my experience. I have performed it on a few cases at the Wills Hospital and have had uniformly good results. The step which gives the greatest value to this operation is the scleral window with a section of the optic and ciliary nerves. This safety valve practically insures the retention of a gold ball and very materially reduces the risk of sympathetic inflammation in the fellow eye.

Dr. George H. Cross (Chester): I have been very much interested in the operation that Dr. Dimitry brought forward again in 1919, and have done quite a good many, with the experience of having the ball expelled in but one case. I was very much interested in trying to determine how badly an eye could be injured and still be a suitable case on which to perform this operation. About two months ago I had a colored man who had been shot through the temple, with a large amount of lead left along the sphenoid bone, and in the orbital tissues, the examination showing the ball had penetrated the globe. I performed the Dimitry operation in this case and found, on removing the cornea and scooping out the contents, that there were several large healed scars in the sclera, but by carefully curetting out the uveal tissue and implanting a 13 mm. gold ball, and sewing the eye up with a straight line of sutures there was no trouble whatever and the eye healed as quickly as could be expected.

In regard to the healing Dr. Dimitry says we should not have any swelling nor reaction afterwards. I think all the men in this section who have done this operation have been impressed with the enormous amount of swelling following the operation. It seems to do no harm, however, and subsides in from five to seven days and the eye is perfectly quiet.

As to the control of hemorrhage, which is the most troublesome feature of the operation, the best way I have found is by a three-point suspension. If one of your assistants will take two pairs of fixation forceps and divide the edges of the scleral opening into three, and place lock forceps at two points, you taking the third point, you can by forward or upward traction control the amount of hemorrhage. Then you can take a narrow von Græfe knife and make an almost complete cut around the optic nerve—leave just a little bridge of tissue there; pick up the nerve head or button with fixation forceps, or mosquito clamp, then make a final cut, severing the bridge of the sclera and cut the optic nerve. It has been very disconcerting to note the time consumed and to discover how difficult it is at times to find the scleral button, once it has been let go of inadvertently.

I use, as a rule, a 13 millimeter ball. The sclera contracts down afterwards and the tissues heal very satisfactorily. The rotation of the stump is most agreeably surprising. You would expect to get more rotation of the artificial eye, but for some reason it is rather difficult. I think the principal trouble is to get an artificial eye which is properly shaped for this type of socket. If you use too large a ball it is very difficult to remove the artificial eye afterwards; but if you use a smaller ball you have just as movable a stump. If you can get an artificial eye with a notch at the outer side to fit over the external conjunctival band, you get a much more movable stump; but of course it is difficult for those of us who are away from large centers to do this, and we have to depend on selections from stock. But you do get better results than in the general run of enucleations. I am sure if we could get an artificial eye made for the purpose we would have still better results.

Doctor Parker says he does not have to use a curette. I have seen one or two cases, the colored man referred to being one, in which it was absolutely necessary to use a curette in order to get the uveal tissue out.

A very helpful point in technique is the use of gauze rolled in the shape and size of a cigarette to remove blood from the operative field.

Dr. Edward B. Heckel (Pittsburgh): I should like to say a word on the subject of enucleations generally. I cannot help but ask the question, "What's the use?" If a substitute is to be offered there must be some reason for it. It must give us a better stump for an artificial eye; otherwise it is of no use. I have lived long enough to have gone through many of these fads, as they might be called. I have implanted glass balls and gold balls, have implanted fat and done eviscerations, etc., but I have gone back to the simple enucleation.

I think if we will stop to consider the mechanics of the movements of the artificial eye, our ideas will change as to trying to produce an artificial stump to take the place of the enucleated balls. In the case of an eyeball the movements are brought about by a pull, in the artificial eye it is a matter of a shove. The artificial eye moves because the tissues on one side are withdrawn and the tissues on the other side are shoved so that when the artificial eye moves out it does so because it is shoved out, and down because it is shoved down, etc. To get the greatest mechanical advantage for these movements the muscles should be spread apart and not bound together about a small ball of fat or what not. I much prefer to do a simple enucleation without any sutures. After the eyeball has been removed and the bleeding stopped, I allow the lids to collapse and place over them a small roll of sterile gauze about as large as my little finger and cover all with a tight bandage, which is permitted to remain in place for seventy-two hours or even longer. By this method the recti muscles are forced apart and find attachment in the stump where the mechanical advantages for the movements of the artificial eye are greatest.

Artificial eyes should have some movement, and a great deal of the cosmetic effect depends upon the anatomical structure of the individual. If a patient had a very large and prominent eye, the result is not as good as if he had a receding eye.

My results, after a simple clean enucleation, for motility of the artificial eye are excellent; hence in classic language, "cui bono" or in the language of the street, "what's the use."

Dr. Harvey M. Becker (Sunbury): I have had in mind for twelve or fourteen years just what Dr. Heckel has said, but I did not have the nerve to say it to you.

Before entering into this discussion I should like to ask Dr. Parker whether he has ever implanted balls that remained, into panophthalmitic sockets?

About fifteen years ago following a blasting accident in a stone quarry I was called upon to enucleate an eye which was completely battered up, and I attempted to suture the muscles and leave as good stump as possible. But the wound fell wide open, as a result of the severely traumatized tissues, and you could look into the hole. There was severe inflammatory reaction and I wondered if the man would ever get well, or if he might die of some intracranial involvement, but the socket finally filled with granulation tissue and healed over beautifully. As. Dr. Heckel stated, the artificial eye is pushed rather than pulled over in its movements, and this man had a beautiful cosmetic result. So I wondered why we attempt to sew up the muscles. Why not let the wound granulate? I have done it a number of times, but was afraid to tell you, fearing unfavorable comment. However after Dr. Heckel I do not hesitate.

Another patient was a boy who was playing with a dualin cap which he exploded with a hammer, a large piece of the cap lacerating and remaining in the globe. Enucleation, without suturing the muscles was done A small drain was retained in the socket for 48 hours, when it was removed and not replaced. In that patient also, the wound granulated and the boy is getting along all right, with a very movable eye.

One of my recent patients is a woman about fifty years of age who had one eye removed, being blind and painful from glaucoma. She has a rather prominent globe on the other side. The artificial eye is well matched and so movable that her friends ask her which eye was removed. It is not because of any skill, but simply that I allowed the wound to granulate.

Dr. Frederick Krauss (Philadelphia): I should like to say a word for the suture operation. I have performed the suture operation for several years with great success, and it has a number of advantages. I found according to the old method, with the circular cicatricial tissue in the center, that for many years afterwards, and in fact throughout the life of the patient, there would be disagreeable attacks of catarrh which we could not control. There was a great deal of discharge on that side, and in spite of all the zinc and silver and other things we could use, we still had this catarrh. I find if the muscles are grasped and the suture placed through, taking in as much as possible of Tenon's capsule each time, you can retain the full action of your lateral, superior, and inferior muscles, together with the oblique. I have a patient I operated two weeks ago. I saw him yesterday, and he has complete rotation as well as lateral and vertical motion in the stump.

Those patients who have been operated in this way have been marked by having a socket that shows no catarrh. The lid is in almost natural position in the absence of a prothesis, and the motion is much better than I have ever been able to obtain by any other operations that I have tried. I find by taking all of the muscles, bringing the muscles of one side to the Tenon's capsule of the opposite side then bringing the superior and inferior into the central position, finally covering the stump by suturing the conjunctiva, that you have a very good socket, good movement of the artificial eye and have no danger of sympathetic ophthalmia.

Dr. Luther C. Peter (Philadelphia): This operation in my hands has been very satisfactory. The essential thing, however, seems to me to be the control of the hemorrhage, thus shortening the length of the operation. Any suggestions in that direction will certainly add to the success of the operation. I can agree heartily with Doctor Cross as to the three-point suspension method. It facilitates the finding of the nerve head and controls hemorrhage wonderfully. If you make the first incision with a von Græfe knife, grasping the stump with fixation forceps, you have it under perfect control. After the nerve is severed, Doctor Cross's method of using cigarette sponges is all right, if you do not twist them; but the moment you twist one of those small sponges you break loose the clots which have been formed. I prefer to use intensely hot water—water so hot that the finger tips can hardly stand it. I find it controls the bleeding very much better than any other method.

Dr. Parker (in closing): Two of the gentlemen, Dr. Heckel and Dr. Becker, referred to suturing the muscles together. In the Dimitry operation the muscles are not sutured together in any manner whatsoever. There is a fulcrum formed by the fifteen millimeter ball, which keeps the muscles apart for a distance equal to the diameter of the ball implanted.

As to Dr. Becker's query as to whether or not I have implanted a ball in a case of panophthalmitis, I have already answered this question in my paper. I have, as I have already said, implanted balls in two cases of panophthalmitis. The balls were expelled in both cases.

Dr. Heckel has just remarked that the enucleation is so simple and the results so good that he sees no reason for any improvement. The simplicity of the enucleation seems to be its main recommendation. The socket heals quickly and all is well in a week or so. For this reason it is likely to be indulged in too often. Dr. Heckel has stated he holds the muscles apart by pressure with a pad of gauze. Personally, I question whether or not these muscles are held apart for long as subsequent contraction must necessarily draw them together as well as retract them. Anyone who has done operations for contracted sockets must have been impressed with this contraction of the tissues regardless of how much separation is secured at time of operation. Personally I do not think a gauze pad is going to keep any cut muscles apart after a few weeks.

Now in regard to Dr. Heckel's remark "what's the use" in putting in a ball, to my mind there is just as much indication for inserting a ball in place of the removed eye as there is in inserting a set of false teeth instead of allowing your patient to run about with empty gums and sagging lips.

THE TREATMENT OF FIBROMYOMATA UTERI*

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Until recent years the only recognized treatment of fibromyomata uteri was surgery. While good results in some cases were accomplished by roentgenology, that form of treatment has been largely supplanted by radium. Some enthusiasts would lead one to believe that, in a definite number of milligram hours, with a few exceptions, all patients with fibromyomata uteri can be cured with radium. With such extravagant claims, there must be, at least in the minds of many, considerable confusion as to how a patient with a fibromyomata should be treated. Before definite conclusions can be drawn it will be necessary to consider the life history of these neoplasms, the malignancies in the uterus and appendages which coexist, the age at which the degenerations and malignancies occur, the age at which the patients seek relief, the associate abdominopelvic lesions, and the results secured by surgery. The results from the application of x-rays and radium must then be reviewed. After all these factors have been considered and the results of the various methods compared, we should then be in a position to determine the best method of treatment in the majority of cases and what should be done with the exceptions. Only by such a study can we apply the proper treatment.

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The life history of these tumors shows that many undergo degeneration of various forms, that the percentage of degenerations and malignancies increases with advancing years up to between the ages of 60 and 65 years, and that the tumors do not disappear after the menapause. In a series of 4,172 collected cases, the various degenerations were present in 23 per cent of the cases. Of these degenerations, 35 per cent were in patients under the age of 40 years, and 65 per cent were in women of 40 years of age or upwards—a condition which shows that the degenerations are nearly twice as frequent after the age of 40 years. Of even greater importance than the degenerations are the malignancies which coexist. It is well known that this is the most serious complication of fibromyomata uteri. Various authorities have reported malignancies in from 4 per cent to 12 per cent of the cases; a fair average will be between 7 and 8 per cent. Approximately 90 per cent of the malignancies were found in patients who had attained the age of 40 years and upwards. These statistics should make it evident to even the most skeptical, that the malignant factor should be considered in all fibromyomata uteri which produce symptoms and require treatment. Series of cases which show a small percentage of malignancies, I believe, indicate that the specmiens have not been given thorough histological study.

Fibromyomata associated with a malignancy of the pelvic organs, if operable, should be treated by surgery and all degenerated tumors should be removed. Even the radiotherapists will agree with this. As the treatment in both classes of cases is the same, it will, therefore, simplify matters if we study them together.

The statistics we have just given demonstrate that of patients with fibromyomata uteri subjected to operation, 30 per cent have either a degeneration of the tumor or a malignancy of the pelvic organs. Lesions of the abdominopelvic organs are so frequently associated with fibromyomata uteri that they must be studied carefully when considering the treatment of these neoplasms if we wish to remove all the pathology and relieve the patient of all symptoms. Anything less than this is a makeshift, and is neither scientific nor satisfactory.

Thus, in a series of 5,898 cases, associate lesions were found in 39.40 per cent, or approximately 40 per cent of the cases. This 40 per cent does not represent the true situation, as it has not taken into consideration the cases of cholecystitis, cholelithiasis and other lesions in the upper abdomen, the pathological changes in the kidneys, and the impairment of function of the gastrointestinal tract resulting in a toxemia from pressure of large and intraligamentous tumors, nor the myocardial changes which are present in a certain number of these patients. When we add to the 40 per cent of associate abdominopelvic lesions the 30 per cent of degenerations and malignancies, we have 70 per cent of complicated cases. In my series, there were 77 per cent with complications. In Deaver's series, in over 90 per cent the appendix alone showed some pathological change. The vast majority of the degenerations and malignancies are found in women past the age of 40 years, and 66 per cent of the patients are past this age before they apply for treatment.

Of the patients subjected to operation, in addition to the removal of the neoplasm, many were operated at the same time for lacerations, hemorrhoids, fistulæ, diseased gall bladders, appendices and other lesions. In spite of all the various complications, by surgery we relieve the patients of all symptoms in from 96 to 98 per cent of the cases. The mortality from operations on patients with fibromyomata uteri by good surgeons in well equipped hospitals is about two per cent. These operative cases include those with the various degenerations, the densely adherent tumors, the malignancies which coexist and all the serious associate conditions. If the surgical mortality in all cases as they come is only 2 per cent, in simple uncomplicated cases it would be practically nil.

Radiotherapists, I believe, are quite agreed that the best results from ray treatment are secured in women past the age of forty years; the older the patient the better the results. Under the age of 40 years, Pfahler states: 1. Roentgenotherapy is not the method of choice. 2. That the rays should not be used: in the presence of a malignancy, if the case is operable; in submucous, or large pedunculated subserous tumors; in degenerated tumors; in tumors associated with lesions of the appendages; in tumors which produce symptoms from pressure and require quick relief, and in tumors associated with pregnancy. The radium experts apply about the same conditions.

Who can diagnose all these conditions by any method of examination? The surgeon certainly cannot. The pathologist sometimes overlooks a malignancy and the condition is not detected until the patient returns with a recurrence. The more competent roentgenologists will not treat these patients unless they have been examined by a gynecologist or by a surgeon. They realize the difficulty in diagnosis and pass the responsibility over to the surgeon. An early gestation in one corner of the uterus gives the organ an irregular contour and may readily be mistaken for a fibromyoma. The difficulty of a differential diagnosis between a gestation and a soft myoma can be attested by the humiliation at the operating table of the most expert. An error in diagnosis may readily occur from a distended bladder or a loaded sigmoid. And again, fibromyoma are not infrequently diagnosed when they do not exist. Who can determine a loop of bowel adherent to the uterus? Ward reports a case in which the adherent bowel became necrotic after the application of radium, resulting in a peritonitis and death. That the radium experts cannot determine with any degree of accuracy what are simple uncomplicated cases is evidenced by the number of patients who subsequently require operative treatment.

When we eliminate the patients under 40 years, and the complicated cases over 40 years of age, it is apparent that the field for radiotherapy is decidedly limited. Frank has estimated that the ray treatment is applicable at the most in only 5 or 6 per cent of patients with fibromyomata. In my experience radiotherapy was applicable to only 16 per cent of these patients who sought relief.

Pfahler, in a series of 95 myomata cases, treated by x-ray, reported permanent amenorrhea in 84 per cent, disappearance of the tumors in 75 per cent, and marked reduction of the size in 10 per cent. Other operators report less favorable results.

Radiotherapists place especial emphasis on the production of amenorrhea, which is simply the elimination of one symptom, and patients with interstitial or subserous tumors usually do not have abnormal bleeding. They talk about the shrinkage of the tumors in many cases, but most of them carefully avoid stating in what percentage the tumors disappeared. Pfahler's results probably represent about the best that can be secured by x-ray treatment.

Some foreign writers state they cure by x-ray treatment all cases of fibromyomata uteri, except those removable by myomectomy. The statement is at such variance with the facts that it needs no further consideration.

Kelly states that before treating a patient for fibromyomata by radium, a careful, general and local examination should be made. A preliminary curettement should be done to eliminate a malignancy and to remove any polypi, and an x-ray examination should be made to exclude calcified tumors which are not responsive to treatment. In his series of 210 cases treated by radium, the tumor had completely or nearly disappeared in only 45 per cent of the cases; diminished in size in 30 per cent. It is regrettable that he did not state in what percentage the tumor had entirely disappeared.

Amenorrhea and shrinkage of the tumor is not a cure, as no one can foretell what will happen to the tumor later on. Cases have been reported in which a malignancy developed during the ray treatment. In other cases malignancy has developed subsequent to the treatment. Pfahler advances the argument that, if malignancy developed subsequent to ray treatment, the literature would contain a greater number of such reports. He and other operators do not recommend radiotherapy for fibromyomata in the presence of malignancies. Surgeons do not refer such cases, and as the radiotherapists treat only simple cases, there is but little weight to this argument.

Taking Pfahler's results, 75 per cent of absolute cures, as probably the best that can be accomplished by roentgen treatment, what have we? Of patients who seek relief for symptoms resulting from fibromyomata uteri and associate abdominopelvic lesions, only 18 per cent of those who are past the age of 40 years have simple, uncomplicated tumors. If 75 per cent of the 18 are cured, we have a net result of only 13.5 per cent of absolute cures. In my own cases, 75 per cent of the 16 would give 12 per cent of cures.

In considering the results secured from treatment by radium, it will be necessary to draw our conclusions from Kelly's report, as he has had a large experience with radium. In the patients over 40 years of age, 45 per cent were cured in the sense that the tumor has either disappeared or shrunken to an insignificant size. Thus 45 per cent of 18, would give 8 per cent of absolute cures.

While it is evident that radiotherapy has an extremely limited field in the treatment of fibromyomata uteri, nevertheless, with our present knowledge, it would seem that it is worthy of consideration in simple, uncomplicated neoplasms in patients past the menopause. Even in this limited class of cases, the crux of the situation is in the diagnosis. What is considered a simple case, proves frequently to be a complicated one. The difficulty in the use of ray treatment even in its limited field is the proper selection of cases. The users of radium emphasize their good results but say little or nothing about the complications or why a certain percentage of their patients subsequently reach the operating table. A broader application of radiotherapy in these cases means that the patient, with her associate abdominopelvic pathology, will be disregarded and the only factor considered will be the tumor.

Radiotherapy is undoubtedly indicated in a patient who has menorrhagia or metrorrhagia following a myomectomy. I believe radiotherapy may also be used cautiously with advantage on patients who do not have, strictly speaking, simple uncomplicated tumors, as follows: (a) In a patient whose general health is so impaired, from any cause, that she could not survive an operation. (b) In cases of marked anemia to control bleeding temporarily, until the patient is sufficiently restored to undergo an operation. If radiotherapy be used subsequent to operation, in those patients in whom a malignancy coexisted, the results will probably be superior to those obtained if surgery alone be employed.

When we recall that 70 per cent of the cases of fibromyomata uteri are complicated, that of the patients subjected to operation, in addition to the removal of the tumor, the abdominapelvic pathology is eradicated, and that from 96 to 98 per cent are cured of all symptoms, while in the same class of cases radiotherapy will give only 8 to 12 per cent absolute cures; it would seem that the proper treatment in such cases, with the few exceptions mentioned, is surgery.

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DISCUSSION

Dr. John A. McGlinn (Philadelphia): I remember many years ago when tuberculin was first presented to the profession, that it was expected to cure all cases of tuberculosis and that it took some time to put tuberculin therapy on a proper basis. The same thing happened when salvarsan was introduced. It was expected that all cases of syphilis were going to be cured and it took us some time to find the real value of this drug. The same thing is true in reference to the treatment of fibroid tumors with radium. In the beginning it is well to state that it is beyond question that both x-ray and radium will cure tumors of the uterus both symptomatically and actually. Dr. Tracey's paper is timely, however, because radium and x-ray should not be used in every case of fibroid tumor of the uterus. It is particularly timely because radium is being used so extensively by men who are specialists in the use of radium rather than in disease and secondly because, on account of the possibility of radium being rented, that agent is falling into the hands of men who know little about the use of radium and less about diagnosis and pathology. While radium will cure the majority of fibroid tumors it should not be used in every case. As Dr. Tracy has stated, many cases of fibroid tumors of the uterus are associated with diseases of the gallbladder or appendix and that operation permits not only the removal of the tumors but also the removal of diseases of distant organs. Radium, of course, does not permit this general housecleaning of abdominal pathology. Again, in fibroid tumors occurring in women still in the child-bearing period, it is often possible to do a myomectomy, thus preserving both menstrual function and child-bearing function. Or, if it is impossible to preserve the child-bearing function, it is at least possible in the majority of cases to preserve enough of the ovaries to maintain menstruation. Radium on the other hand generally destroys both of these functions. It is true that menstruation has returned and pregnancy has followed after the use of x-ray and radium but these are the exceptional cases and not the rule. It is impossible to estimate the dosage which would permit these functions being reestablished. I have a case in mind in which a young woman received one application of x-ray treatment and who has been absolutely sterile and without menstruation for the past eight years.

In cases in which calcification has occurred or when the tumor is necrotic, operation is to be selected in preference to radium. When it is associated with pelvic and inflammatory diseases of the tumor, radium and x-ray are distinctly dangerous. I have seen violent infections lighted up requiring pelvic drainage after the use of x-ray. So far as malignancy associated with fibroid tumors of the uterus is concerned, I feel that we have been needlessly condemning the use of radium and x-ray. There is no doubt at all that radium will cure cancer of the uterus. I had two patients in my office this week upon whom I have used radium for what were inoperable cancers of the pelvis and at the present time there is no trace of cancer present. When one sees the remarkable results obtained in the treatment of inoperable cancers of the cervix with radium, he simply stands amazed at the apparently miraculous power of this agent. Now if radium will cure cancer unassociated with fibroid tumor of the uterus, it is quite likely to cure it if it is associated with fibroids or to prevent its development. Again, if we turn to surgery as a preventive against the danger of cancer developing fibroids, we gain little. If we do the operation usually done for fibroids; namely, amputation of the uterus, the cancer develops in the cervical stump left behind. If we follow Polak's suggestion and do a complete hysterectomy for fibroids, we then kill by operation about as many patients as would develop cancer if the incomplete operation had been done. So that by surgery we gain little or nothing in the prevention of cancer.

I do not wish it understood that I am at all opposed to the use of radium in the treatment of fibroids. On the other hand, I am a very strong advocate of this method of treatment. I used radium this morning, I am going to use it tomorrow morning, and I am going to use it again on Friday morning. The point that I wish to make is that in using radium or x-ray for the treatment of fibroids of the uterus, we must not use it on every case simply because it avoids the operative mortality of surgery but that we must select our cases. Surgery cannot be discarded at the present time in the treatment of these neoplasms which are associated with certain complications.

Dr. Frank Benton Block (Philadelphia): I want to take issue a little bit with Dr. Tracy in the matter of condemning radium in the treatment of fibroids. I do not think he has presented the subject in a fair light. Anyone who works with radium will admit that a very limited class of fibroids should be radiated. We exclude first, all cases in which any degeneration is expected, and every uterus which is larger than three or four months' pregnancy. If, at the time of curettement, you find any suspicion of malignancy, that case can be held over until you get the microscopic report of scrapings and if it is not malignant, you can radiate. On the other hand, if you overlook small malignancy, the chances are that radium would cause atrophy of that very early carcinomatous growth. The chances are good that any gynecologist can tell whether the adnexa are involved or not. If they are involved radium should never be used. In regard to the complications in the upper abdomen, there are numerous cases in which the patient comes for treatment of a fibroid and cannot stand an extended operation and I dare say that often a case will be operated for fibroid and the surgeon's better judgment will tell him to close the patient before taking out gallstones because of the fact that he will increase his mortality. There are often patients who come in who are quite anemic, down to 50, 40 or even 30% of hemoglobin. You all know what will happen if you operate on these patients when they come in and yet they are uncomplicated and you can apply 50 milligrams of radium—it is no more trouble than a little curettage—and you can control bleeding. What are you going to gain by removing the uterus later? You have stopped bleeding and the tumor has decreased in size. That is all you want to accomplish. If you have done that, the patient is well. Dr. Tracy mentioned that quite a few of these patients required operation after radium has been applied. I should like him to let us know just how many of these patients he has seen after proper application of radium for fibroids that required operation.

Dr. Tracy (in closing): In women under the age of forty years, I agree with Dr. McGlinn that a myomectomy should be done. A few days ago I saw a patient, aged 34, on whom I did a myomectomy four years ago. While the tumor had a pedicle the width of the fundus uteri, it was considered a simple uncomplicated case. After the operation the tumor was cut open and, much to my surprise, it contained fully 30 c.c. of pus. Two weeks ago she gave birth to a fine big boy. This case emphasizes the value of a myomectomy, and also the difficulty in differentiating a simple from a complicated fibromyoma. The best treatment for cancer of the cervix uteri remains to be determined. It would seem that radium will eventually be the best treatment. Dr. McGlinn did not differentiate between cancer of the cervix and cancer of the fundus uteri. While radium is used extensively in the treatment of cancer of the cervix uteri, it seems to be the opinion of most men that cancer of the fundus uteri should be treated by surgery.

Dr. Block stated it was easy to diagnose an inflammatory condition associated with a fibromyoma. Dr. Block, or no other man, can determine with any degree of accuracy whether he is dealing with a simple or a complicated fibromyoma. Only recently I was talking with a physician on this subject and he stated that when one of his patients with a fibromyoma was treated with radium, an old inflammatory condition was not recognized, a violent peritonitis set up, the patient was desperately ill, but finally recovered. I stated in my paper that the statistics did not include gall bladders, gastric ulcer or any pathological lesions of the upper abdomen. I have not seen any cases Dr. Block has treated with radium which have gone wrong. It is not necessary to tell the advocates of radium of their failures. They acknowledge them. Kelly admits that 8% of his fibromyoma cases treated with radium finally arrived on the operating table. Clark, in discussing the subject, stated his experiences were similar to those of Kelly. In the early days of roentgenology, the rays were tried for almost every known lesion. After years of experimentation roentgenology found its proper place. Radium is going through a similar experience. Radiotherapy will undoubtedly give good results in a certain type of simple uncomplicated fibromyomas, but on account of the associate abdomino-pelvic pathology, surgery must be the treatment if we wish to relieve the patient of all symptoms.

SELECTIONS

A PECULIAR PUSTULAR CONDITION

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On November 6, 1920, a specimen of pus was received by me for examination from Dr. Karl Glasgow, of the Medical Department of the Dravo Contracting Company. My attention was immediately attracted to it as it had a very peculiar light blue (perhaps best described as lilac) color. This pus had been taken on the same day as received at the laboratory and on arrival was immediately examined microscopically and inoculations made into dextrose broth tubes and upon agar slants. The microscopic examination of smear preparations, stained with carbol-fuchsin, methylene blue and by Gram's method all showed the pus to be in a very advanced stage of digestion. The specimens contained much cellular debris but resolution had taken place to such an extent that the type of reacting cell could not be determined and very careful search of all three slides failed to reveal the presence of the causative agent. Twenty-four and forty-eight hour incubations at 37° C. of the dextrose broth and agar slants were similarly negative.

This information was sent to Doctor Glasgow. Interest was aroused in the clinical manifestations and a desire to see the case was expressed. The patient was examined by me on November 10, 1920, and the condition was such a peculiar one that I called in Dr. William L. Marks, of the Department of Student Health of the Carnegie Institute of Technology. We all agreed that we had never seen anything like it before. No treatment except the application of sterile dressings had been instituted thus far. The history of the case up to this time was as follows:

N. F., seventeen years of age, an American of Italian parentage, reported to the dispensary on October 24, 1920, with a swelling over the left fifth intercostal space a little posterior to the midaxillary line. At that time there was an area of induration about the size of a silver dollar about a draining aperture of six millimeters in length. He described its beginning as from a "pimple" which later spontaneously ruptured and discharged "blue matter." Pain was apparently absent at this time, as it had been at all times previously. His first knowledge of the rupture and color of the discharge was obtained when his mother called his attention to the stained bed linen. He denied ever having received an injury to this part of his body. He had taken no medicines since he had scarlet fever, six years ago, which was his last illness. The family history was negative in all respects.

At this time (October 24th) he refused to permit the enlargement of the original opening for the purpose of establishing better drainage. The week following the area was redressed twice daily, the gauze which was removed at each dressing was saturated with pus of a lilac color. The discharge gradually diminished until, at the end of the first week, it became necessary to manipulate the surrounding area in order to obtain a sample for bacteriological examination. This pus still retained its characteristic lilac color. An apparently destructive property of the pus discharged, denuded the epidermis. At no time was there any constitutional disturbance; the appetite was not affected and no functional abnormalities were noted. The urine analyses were negative. No pain was experienced at any time.

When I saw the patient (November 10th) examination revealed a swelling in the location above described, with a base about as large as a silver half-dollar and the center elevated about one centimeter above the surrounding epidermis. The whole area involved was of a dark blue color and resembled a subdermal hemorrhage but the skin surface about the periphery of the swelling was singularly free from any reaction. No discharge was present but the point at which it had spontaneously opened was noted. On palpation more resistance than one finds in the ordinary abscess was experienced and the mass did not fluctuate. In reply to questions with regard to pain and tenderness, the patient replied that it had never bothered him and he made no objection to rather firm manipulation.

It was decided to attempt to aspirate material from the swelling and while the needle used was sharp (though of medium-sized bore) great resistance was experienced after puncturing the skin before entrance was effected into the mass under examination. It was thought that this resistance was due to the presence of reacting tissue formed about the lesion but no attempt was made to demonstrate this point. The material as it came up into the syringe was of the same lilac color as that originally sent into the laboratory for examination. Inoculations into dextrose broth, dextrose serum broth, lactose broth, lactose serum broth, and upon plain agar slants were made and from the plunger of the syringe direct smears were taken for microscopic examination. (The results of this examination are given later.)

It was recommended to drain the abscess at its most dependent point and apply Dakin's solution.

Following the suggestion given incision was made at the most dependant point, and through and through drainage was established on November 12th. It was noted that the pus had now taken on a deep purple cast and had increased in viscosity until it was of a stringy nature. At this time it was irrigated with warm Dakin's solution, a drain inserted and a sterile dressing applied. The following day the purple color had entirely disappeared and was replaced by a grayish-white discharge, typical of the staphylococcus albus infection.

This treatment was repeated daily until November 15th, when 25% argyrol was instilled into the cavity. After four days of this treatment (November 19th) the wound closed overnight and the infection had entirely cleared up, so the patient was discharged.

On November 22d he returned with a slight temperature due to a bronchial infection. At this time the area previously abscessed was examined and it was found to be completely healed. The patient was free from his bronchial infection on November 25th and has experienced no further difficulties up to this time.

From the clinical evidence, i. e., no general reaction, entire lack of constitutional disturbances and very slight local reaction, it was apparent that the causative agent was of very low virulence. As above stated previous microscopic examinations of the pus sent to the laboratory failed to reveal the morphological character of the reacting cells and because of this no distinction on this basis could be made as to whether the process was acute, subacute, or chronic.

DESCRIPTION OF SLIDES

Direct smear of pus taken on November 10, 1920. Stained with methylene blue.

The microscopic examination revealed the presence of a bacillus varying from 4 to 8 microns in length and about one micron in width. The organisms showed a definite tendency to chain formation and frequently there were five to six cells in this chain; however a single cell was by no means rare. The chains were seldom straight but turned upon themselves, frequently approaching a ring formation. Most of the organisms stained evenly but here and there the protoplasm of the cells showed a definite granular appearance.

The reacting cells were in a very advanced state of degeneration but two distinct types were observed. The first was of an epitheloid character with its nucleus and outline fairly well demarcated but the cytoplasm (except at the periphery) did not stain well. The presence of the other type of cell was shown simply by the remnants of some polymorphonuclear and polynuclear leucocytes but there were only a few of these present. Much cellular debris with a small amount of substance which stained like colloid, completed the picture.

In no case was the observation of the presence of any of the organisms within the cells made, but the advanced state of digestion was such that this well may have been the case at some previous time, though there was nothing to indicate it in the stained preparation. While the picture was not clear cut, the evidence seemed to support the view that the process was of a chronic character.

Direct smear of pus taken on November 10, 1920. Stained with carbol-fuchsin.

Practically the same picture as seen in the methylene blue stain, except the pus cells were not as well stained. More substance of the nature of colloid was present.

The Gram stain of the pus taken at the same time as those above described, showed the organism to be gram negative but added nothing to the above description of the character of the reacting cells. It was stated above that at the same time (November 10, 1920) that the smears were taken, inoculations were made into a number of media. From none of these was the causative agent recovered.

CONCLUSIONS

From the history, physical examination and microscopic slides, there is little doubt that we were dealing with a chronic, low-grade infection. Lack of growth in artificial media precluded the possibility of determining the biochemical reactions of the organism. Pigment production and morphology are the only additional facts upon which a diagnosis can rest.

As pathogenicity is only a relative term and because of the ease with which the infection subsided with treatment it is just possible that we were dealing with an organism, ordinarily saprophytic but owing to a peculiar susceptibility of this patient the organism was able to become mildly pathogenic.

In consulting Chester's "Manual of Determinative Bacteriology" in regard to rod forms which produce a blue or violet pigment, one is immediately impressed with the facts that in all of those described:

1. Production of pigment occurs on artificial media.
2. Many do not grow at 37° C.
3. They are saprophytic, their normal habitat being usually water or air.
4. Under no conditions are any of them referred to as being pathogenic to man.

There is at times some difficulty experienced in obtaining growth on artificial media in the case of organisms recently isolated from disease processes. This is particularly true of pathogenic organisms when only small amounts of material are used for inoculation purposes and but a single substratum employed. In this case several types of laboratory media were used and vary heavy inoculations resorted to, so it would seem from this that the organism was one incapable of growth in laboratory media. It should also be remembered that it grew at 37° C. (in the disease process) and produced its pigment under those conditions. Its inability to grow on laboratory media seemed to indicate that it was not saprophytic in nature, as are all those described by Chester, otherwise we should expect it to accommodate itself easily to artificial media.

It would seem that there is sufficient difference between the causative agent and any of the organisms above referred to (and more particularly when the clinical picture is recalled) to warrant the belief that the causative agent has not before been described; the name B. Sedgwicki is therefore proposed.

ABSTRACTS FROM OPHTHALMIC LITERATURE

June, 1921

BY MATTHEW F. CZUBAK, M.D.
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Erggelet advances the theory that the movement in the anterior chamber is due not only to specific gravity but also to radiation, the active movements of the eye causing an interference with the heat currents. He states that the reason that particles are not deposited on the anterior lens capsule is because of the latter's perpendicular position.

R. Plocher agrees with Erggelet's theory of gravitation plus radiation but disagrees with the statement that no deposits are formed on the anterior lens capsule and cites a case to prove his contention. He believes that such deposits are frequent in cases of acute uveitis.

Berg likewise endorses Erggelet's theory. Working with a Nernst-Gullstrand lamp, he found that aphakic eyes showed the movement more plainly on account of the increased depth of the anterior chamber. In the posterior zone of the chamber the direction of the movement was ascending, while in the zone nearest to the cornea it was descending.

T. S. Barrie, in studies on inequality of the pupils, examined a large number of men free from ocular defects and from central nervous disease. Eleven per cent showed inequality of the pupils and led him to make the following conclusions: 1. Inequality of the pupils is frequent. 2. It is associated with all refractive conditions, with a tendency to be more frequent in myopia. 3. It bears no relation to visual acuity. 4. The left pupil is affected more frequently than the right. 5. It occurs as a physilogic condition.

G. A. Albright cites a case of traumatic uveitis in which the pupils did not dilate well. Atropin produced no mydriasis, pupils 3/4 mm.; euphthalmin alone dilated them to 4/5 mm.; cocain and euphthalmin each 5 per cent, secured prompt mydriasis; cocain in the atropinized eye secured greatest mydriasis, pupils 7 mm. Cocain alone was slightly better than euphthalmin, pupils 6/7 mm.

M. Folman claims that the term "Rheumatic Iritis" has no clinical significance. In 47 per cent of the cases studied by him, in which the above diagnosis had been made, after all other etiologic factors in the usual iritis cases had been eliminated, he obtained a history of a former gonorrheic infection. He aptly advises that every case of iritis of uncertain etiology should be very carefully examined for gonorrhea. Vaccine therapy yielded good results, especially in the type of cases diagnosed "relapsing rheumatic iritis."

Paradies obtained good results in two cases of uveitis which he treated with subcutaneous injections of strychnine. His explanation is: The iridocyclitis was due to circulatory stasis. Strychnine acts selectively on the circulatory centers of the medulla, causing the blood vessels in the iris to receive their normal amount of blood and thereby removing the cause.

A. E. Davis in an article on tuberculosis of the choroid advises the routine use of the tuberculin test as well as the Wassermann in all cases of doubtful etiology.

T. C. Cooke believes sympathetic ophthalmia is an anaphylactic inflammation but thinks that focal infection caused by an invader similar to that implanted in the exciting eye furnishes the larger dose required to cause anaphylaxis.

K. Bohm refers to the endogenous origin of sympathetic disease and cites nine cases caused by subconjunctival dislocation of the lens. The conclusion is that, although clinically the conjunctiva may be intact, microscopically there may be sufficient opening to allow the entrance of infecting material.

F. Dimmer quotes *Schirmer:* "Sympathetic ophthalmia generally appears within the first year after the injury, usually after the fourth week and most frequently between the sixth and twelfth weeks after injury." Dimmer adds that the small number of cases seen during the war was due to the timely enucleation and thinks this fact deserves the widest publication.

Van Schevensteen urges that enucleation be done within two weeks after the injury.

E. Weeks summarizes his personal views of the treatment of glaucoma as gained from 32 years' practice of ophthalmology. He routinely tries miotics in all cases of glaucoma before he advises operation. He uses pilocarpin ⅓ to 2% and physostigmin (eserin) salicylate ¼ to 1% in 3% boric acid solution to prevent rapid deterioration. As adjuvants he uses jaborandi internally, opium at times and free catharsis. Pilocarpin in ⅓ to 1% solution is used as a preventative in those cases in which the tension is high or unsafe, the anterior chamber shallow and where there is even a slight cupping of the whole or part of the disc. Diminution in the field of vision for form and colors is an urgent sign for operative interference. In acute cases he prescribes eserin 1% instilled every hour, morphin hypodermically, calomel purge, and light diet. If after twelve hours there is no decrease in tension, operation is performed. If the tension is subsiding, operation is delayed until the eye has become as quiet as possible. Broad iridectomy is then done. In the subacute and chronic cases, he prefers the Lagrange operation. The Elliot trephine is done in buphthalmos cases, those with deep anterior chambers and cases of simple chronic glaucoma with relatively low hypertension.

In the medical treatment of cataract *L. Dor* uses calcium chloride gm. 4, sodium iodide (desiccated) gm. 4, distilled water gm. 500. The eyes are bathed daily for three months and at regular intervals for the remainder of the patient's life.

L. D. and *A. S. Green* claim that dense nuclear or subcapsular cataracts may respond favorably to subconjunctival injections of 20 mm. of 1-4000 solution of cyanide of mercury. The site of the injection is just below the external rectus and about 1 cm. from the limbus in a nonvascular area. One week after this injection the patient is given a 1% solution of potassium permanganate and a 2% solution of dionin. These are used on alternate nights, the former as an eye bath and the latter instilled in one drop doses. The dionin is increased in strength 2% each month until 8% is reached. The vision a day or two after injection is lower than before but improves rapidly and attains its maximum about a week later.

Abstractor's Note:—As the injections of cyanide of mercury are apt to be painful when given alone, acoin m. 3/5 of a 1% solution is usually added to the cyanide to produce anesthesia.

A. Peters summarizes the work of his pupil *Hartman* on the pain of photophobia. Normally, glare causes no real pain. Manifest or latent affections of the trifacial nerve result in a hypersensitiveness which exists irrespective of refractive errors and muscular troubles and is evidenced by asthenopia, lacrimation and photophobia and frequently pain from pressure on the supraorbital branch. Ergot, quinine and iron or with the tincture of eucalyptus relieves the symptoms. Lacrimation in the cold is a typical symptom. Atropin relieves by its effect on the nerve fibers in the iris. The photophobia and blepharospasm in phlyctenular disease are due to the roughness of the cornea and to real pain from irradiation in the hypersensitive trifacial.

Santos Fernandes claims the pain in photophobia of inflammations of the anterior part of the eye is due to the continuation of the process to the retina.

Ribon refers to the affections of the eye produced by improperly colored glasses. Blue glasses fatigue the retina. Patients with optic atrophy like yellow glasses because they seem to give them a sensation of greater brightness. It is helpful to close the eyes for a while, too, after removing colored glasses so that the eyes can adapt themselves to the new conditions.

Lohman studied dazzling by light and made several interesting observations: The greater the disproportion between the general illumination and the dazzling light, the greater the dazzling. Increasing the angle of incidence increases the dazzling effect. Dazzling one macula influences the other eye so that the two visual fields clash and the test object appears to the nondazzled eye only occasionally. A colored glass increases the dazzling by increasing the adaptation more than it decreases the dazzling by diminishing the luminosity. Corneal opacities produce dazzling. Fundus affections produce dazzling by disturbing adaptation. Unilateral cataract may decrease vision and on closing the affected eye, vision is improved.

In discussing angiosclerosis, *Uribe Troncoso* states that the first stage is rarely seen because it produces no subjective symptoms. This early stage shows the vessels dilated from degeneration of the muscle and elastic fibers, from formation of spaces in the elastica and noninflammatory swelling of the intima. The arteries are dilated, tortuous and pulsate. The veins show little change but at times are alone affected.

ABSTRACTS FROM AMERICAN JOURNAL OF OPHTHALMOLOGY

July, 1921

BY MATTHEW F. CZUBAK, M.D.

PHILADELPHIA

RESTORATION OF OBLITERATED EYE SOCKET

JOHN M. WHEELER, M.D.

NEW YORK

Wheeler's article describes the latest technic as developed from war surgery. In a case of complete obliteration of the socket, the pus forming areas must first be eliminated. Preliminary plastic operations are done for any eyelid deformities that may exist. General anesthesia is used, preferably through a tube, to preclude interference with the operative field. The patient is necessarily free from constitutional ailments and in the best physical condition possible in order to insure a complete "take" of the graft and prompt healing.

1. Free canthotomy is first made so that a large form may be introduced and the whole socket restored

at one operation. The plane of the dissection must be superficial, not into the orbital tissue, and having only skin, orbicularis, the thin fascia of the lid and tarsus in front of the knife.

2. The extent of the dissection is as important as the plane. Down and out, it is carried to the orbital margin or even 1 to 2 mm. beyond so that the graft will adhere to the periosteum of the anterior aspect of the orbital margin. Nasally it is continued to the anterior crest of the lacrimal groove and to the orbital margin about it. The internal canthal ligament and the caruncle are to be avoided. It is more important to have a deep cul-de-sac below than above, that the lower lid need not be relied upon for any support for the prothesis. Laterally the socket should extend well beyond the canthi so that no part of the edge of the artificial eye is visible.

3. All cicatricial and granulation tissue must be removed, any decrease in the size of a newly made socket being due not to contraction of the graft but to that of the underlying tissue.

4. The tarsus is next trimmed. If the graft must extend to the margin, the tarsus is split and thinned. If not to the margin, enough tarsal plate can be cut away to allow the graft to set in as an inlay. Thus the commonly seen over-thick lid is obviated and just enough tarsus to support the cilia is left. Undue traumatism of the tissues is avoided.

5. Dental impression compound is now moulded to fit the cavity.

6. The skin graft is then taken from the outer thigh, epidermis alone being desired and no true skin. The graft should be large enough to cover the form with generous overlapping. It is placed on the form, raw surface outward, with the overlapping anterior. Form and graft are inserted into the socket.

7. A very firm dressing is applied and left on for a week. After that time the dressing may be changed daily but the form is undisturbed for three weeks. Upon removing the form the socket may be left for days without any dilator in it until the artificial eye can be put in.

OCULAR DISEASES OF NASAL ORIGIN

JAMES ALLEN PATTERSON, M.D.

COLORADO SPRINGS, COLO.

The writer discusses diseases of the nose in their causative relation to:

1. External ocular diseases, as, follicular conjunctivitis and phlyctenular disease.
2. Orbital affections, as orbital cellulitis.
3. Diseases of the deeper tunics, optic nerve and cavernous sinus thrombosis.

He attributes the majority of cases of ordinary chronic conjunctivitis to diseases of the nose, including the lacrimal passages. Removal of the tonsils and adenoids aids in the treatment of follicular conjunctivitis, as does correction of the refractive error.

Phlyctenular conjunctivitis and keratitis are usually associated with mucopurulent secretion from the nose, nasal stenosis and ulcerations about the alæ nasi. He claims that in no affection is so prompt a cure produced as in phlyctenular disease by the removal of the tonsils and adenoids.

From a study of 25 cases of vitreous opacities he concludes that "ordinary nonspecific hyalitis is a result of a cyclitis of a low grade of activity produced not only in myopic eyes by the systemic diseases mentioned by Hill Griffith, but that diseases of the middle meatus of the nose, in which there is imperfect drainage, are liable in some instances to be a causative factor."

Papillitis, and more frequently retrobulbar neuritis, he says are due to causes located in the posterior ethmoid cells and in the sphenoid cavity. He advises early operation within the ethmoid and sphenoid areas in optic nerve disturbances when other diagnostic methods such as x-ray of the teeth and sinuses, Wassermann and other blood examinations are negative.

In threatened cavernous sinus thrombosis he believes an early exenteration of the ethmoids and breaking into the sphenoids is warranted to favor depletion and drainage.

MEIBOMIAN GLANDS IN CHRONIC BLEPHAROCONJUNCTIVITIS

SANFORD R. GIFFORD, M.D.

OMAHA, NEB.

Gifford states that inflammation of the meibomain glands alone or as a complication is a common source of discomfort among elderly people. He describes:

1. Simple hypersecretion.
2. Simple inflammation or simple chronic meibomitis.
3. Chronic meibomitis with hypertrophy.
4. Chronic meibomitis with chalazia.
5. Chronic meibomitis secondary to various forms of chronic conjunctivitis, especially trachoma.
6. Chronic meibomitis with concretions.

Periodic squeezing of the lids with the two thumbs, an ointment of zinc oxid in a stiff waxy base (Chesebrough's oint.), removal of concretions and correction of the refractive error comprise the treatment.

RETINITIS OF CARDIOVASCULAR AND RENAL DISEASES

WILLIAM L. BENEDICT, M.D.

ROCHESTER, MINN.

Benedict classifies retinitis as follows:

1. Retinitis of acute nephritis.
2. Retinitis of chronic hypertension.
3. Retinitis of arteriosclerosis.
4. Retinitis of diabetes.

He differentiates these types and illustrates his article with a diagram showing how arteriosclerosis of the retinal arteries may be produced, and the most frequent retinal condition following or accompanying such sclerosis.

August, 1921

TYPICAL SIDEROSIS OF CRYSTALLINE LENS. NO CLINICAL EVIDENCE OF A SPLINTER OF IRON

PROFESSOR DANIEL VAN DUYSE GAND and DR. MARCEL DANIS

BRUXELLES

The case reported was of medicolegal interest. In November, 1917, the patient was struck in the right eye by a fragment of casting thrown off in cutting a pipe. Two years later the eye is sightless, the lens opaque with little brownish points on its surface arranged in a circle. No evidence of a wound of entrance and no foreign body could be discovered. Careful study seemed to show that a small splinter of iron had probably entered at the limbus, had been retained in or near the crystalline lens and had become oxidized to such an extent that it did not yield positive findings when tested by x-ray, Haab giant magnet or galvanometer. Pigment spots on the anterior capsule are carefully differentiated from the rust spots underneath the capsule.

TUBERCULAR INFECTION AS A CAUSE OF DELAYED HEALING IN OPERATIONS OF THE EYE

EDWIN B. MILLER, M.D.
PHILADELPHIA, PA.

Miller reports two cases of delayed healing in which the causative factor was discovered by strongly positive von Pirquet tests. Both cases responded readily and rapidly to Koch's old tuberculin.

THE ETIOLOGY OF CHRONIC MEIBOMITIS

SANFORD R. GIFFORD, M.D.
OMAHA, NEBRASKA

Sixty-five patients were used in a study of the bacteriology of pathologic and normal meibomian glands. Bacillus xerosis was found in large numbers in the smears of chronic meibomitis, and is found much more frequently in the normal meibomian secretion of the elderly than in that of the younger people. Thus, as old age advances more and more, xerosis bacilli may find their way into the glands, senile tissue changes favor their growth with a resulting irritation from these foreign bodies and subsequently hypersecretion and inflammation. Occlusion of the ducts leads to chalazia but the fact that the young are more affected with chalazia than the old and that staphylococci are more frequent in the young than are xerosis bacilli, leads to the suggestion that the more acute chalazia are staphylococcic in origin while the simple meibomitis is more likely to be due to the xerosis bacilli.

SOME NEW TESTS FOR ASTIGMATISM

ERNEST E. MADDOX, M.D.
BOURNEMOUTH, ENGLAND

In the first test reported, the letter "V" is made to circle around the periphery of Snellen's small fan of lines. The "V" is used as an indicator to point out to the examiner the line best seen by the patient and as a confirmer, to test the correctness of the patient's choice, by comparing the blackness of the two arms of the "V." If the proper line has been chosen by the patient the two arms of the "V" will appear equally black. If one arm looks blacker than the other, the blacker arm will look toward the location of the correct astigmatic line.

The second test consists of a broad arrow bisecting a large cardboard disc, rotatable about its center, and with a square of horizontal stripes on one side of the arrow and a square of vertical stripes on the other side of the arrow. The arrow is used to detect the axis of the astigmatism. Minus cylinders are then added until the horizontal and vertical stripes are equally clear. The patient must first be made myopic and before adding minus cylinders, the proper spherical correction is added.

The third test is for children. It consists of two squares, one above the other and two striped circles. The child finds it easy to select the clearer handkerchief or square and the prettier ball or circle.

DISCIFORM KERATITIS SECONDARY TO SMALLPOX

HARVEY K. FLECK, M.D., F.A.C.S.
BALTIMORE, MD.

Fleck reports a case of disciform keratitis following a foreign body on the cornea and occurring about the time the patient contracted smallpox. The opinion given is that disciform keratitis secondary to smallpox is a specific inflammation, probably as specific as the smallpox pustule itself, and that the injury to the eye was merely a coincidence.

OCULAR DISTURBANCES IN ENCEPHALITIS LETHARGICA

P. J. WAARDENBURG, M.D.
ARNHEM, HOLLAND

The writer reports two cases of encephalitis lethargica and reviews twelve other cases reported in Holland. The most important ocular symptoms are: paresis of accommodation and convergence, long continued inequality of the pupils, diplopia, temporary rigidity of the pupils and disturbances of the associated ocular movements. Paresis of accommodation is by far the most frequent symptom. It may also be found in syphilis, botulism and diphtheria. In botulism it may be accompanied by a total paralysis of the sphincter, which is absent in diphtheria.

THE BARRAQUER INTRACAPSULAR CATARACT OPERATION

A. S. GREEN, M.D.
SAN FRANCISCO

AND R. PACHECO LUNA, M.D.
GUATEMALA, C. A.

The writers report impressions gained from a visit to Prof. Barraquer's clinic at Barcelona. Their comments are very favorable to this operation of phacoeresis. Stress is laid on the importance of securing a proper erisiphake and on the special skill and technic required.

OCULAR MANIFESTATIONS IN ENCEPHALITIS LETHARGICA

GUSTAVUS I. HOGUE, M.D., F.A.C.S.
MILWAUKEE, WIS.

Hogue reports the eye symptoms in order of frequency, as follows: diplopia, ptosis, impaired accommodation, nystagmus, sluggish pupils, optic neuritis, papilledema. He asserts that ptosis combined with ocular paresis is pathognomic of encephalitis lethargica. Impaired accommodation is the last ocular symptom to leave. The pupils are sluggish and may be irregular and unequal. In some cases the pupils remain dilated and fail to react to light. Drs. Loewe and Strouse of New York have isolated the causative organism and their findings have been confirmed by Dr. Thalheimer of Milwaukee. Differential diagnoses must be made between this disease and brain tumor, extra dural abscess, tuberculous or serous meningitis, uremia of diabetic coma, cerebrospinal lues, and hysteria. Four case reports are given in detail as to eye symptoms.

A SIMPLIFIED INTRANASAL OPERATION FOR OBSTRUCTION OF THE NASOLACRIMAL DUCT

R. H. GOOD, M.D.

CHICAGO, ILL.

Instead of making an artificial opening from the lacrimal sac into the nose, as in many operations of this type, Good removes the inner bony wall over both the lacrimal sac and duct and slits the sac as well as the duct. Thus the sac can drain above while the duct is healing and eventually the duct functions and the opening in the sac closes, leaving a normal functioning lacrimal apparatus. Five of the most difficult cases operated are cited.

SUBCONJUNCTIVAL DISLOCATION OF THE CRYSTALLINE LENS

GEORGE C. ALBRIGHT, M.D.

IOWA CITY, IOWA

This is the report of a case of subconjunctival dislocation of the lens with subsequent spontaneous or traumatic expulsion of the lens through the conjunctiva, with removal through the lower cul-de-sac. The patient was unusually unresponsive to pain or reaction.

A POINT IN THE TECHNIC OF IODIN TREATMENT OF CORNEAL ULCERS

HAROLD GIFFORD, M.D., F.A.C.S.

OMAHA, NEB.

To avoid the rapid evaporation of the ordinary tincture of iodin and the subsequent drying of the swab before the ulcer can be touched, Gifford suggests two methods. The first is to make use of a syrupy iodin solution made by adding 10-12 iodin crystals to 10-15 drops of the ordinary tincture. The second method, suggested by Person, is to add 5% glycerin to the ordinary tincture.

September, 1921

RADIUM PLUGS FOR THE DISSOLUTION OF ORBITAL GLIOMATOUS MASSES DEVELOPING AFTER EXCISION OF THE GLOBE

BURTON CHANCE, M.D.

PHILADELPHIA, PA.

Chance reports a case of bilateral glioma in which the two eyes had been excised a year previously, a recurrence of the growth being controlled, metastasis prevented and life prolonged by the use of radium plugs or needles. The case is reported to urge the prompt employment of this means of checking the extension of the deadly disease which follows the proliferation of the neuroepitheliomata.

ELECTRICALLY TINTED OPTICAL GLASS

SIDNEY L. OLSHO, M.D.

PHILADELPHIA, PA.

Olsho describes a method of tinting optical glass electrically. A chart showing the transmission of the ultraviolet and visible spectrum accompanies the article.

PROTEIN IN TEARS AND INNERVATION AND SECRETION OF THE LACRIMAL GLAND

C. F. CHARLTON, M.D.

PASADENA, CALIF.

Charlton reviews the researches of J. Loeb in regard to the action of protein content of the tears. Like the salivary glands, the lacrimal gland has a double innervation, accounting for the dual nature of the glandular secretion: (1) a thick viscid protein fluid, and (2) tears. The lacrimal, like the parotid, receives its central innervation from the glossopharyngeal. The fibers are carried in the facial to the geniculate ganglion, thence to the sphenopalatine ganglion by the great superficial petrosal nerve. From here they turn back in the second division of the trigeminal to the gasserian ganglion and reach the gland by way of the first division of the trigeminal. It also has a sympathetic innervation. Central stimulation probably produces the highly watery tears while the sympathetic is responsible for the thicker protein fluid ordinarily secreted. Stock states that facial paralysis above the geniculate ganglion causes a suspension of weeping but that the moistening of the eye is unimpaired.

The protein content of the lacrimal secretion has a practical application in the nourishment of the anterior layers of the cornea. Xerophthalmia, which responds rapidly to a fat and protein diet, is probably due to the linking up of serum globulin with a lipin.

SENILE CATARACT EXTRACTION

WALTER R. PARKER, M.D., F.A.C.S.

DETROIT, MICH.

This is a report of a comparative study of the results obtained in 1,421 cataract operations of different types. The conclusion reached is that of the present methods, the combined operation is regarded as the most satisfactory in all but specially selected cases.

HEREDITARY PTOSIS

T. J. DIMITRY, M.D., F.A.C.S.

NEW ORLEANS, LA.

This writer reports 21 cases of hereditary ptosis or, more accurately, congenital blepharophimosis, in a known five generations. In the cases operated, canthoplasty with a tenotomy of the palpebral ligament was the operation of choice.

THE SURGICAL TREATMENT OF COMITANT AND PARALYTIC STRABISMUS

JOHN M. BANISTER, M.D., F.A.C.S.

OMAHA, NEB.

Banister very thoroughly describes his operative treatment of the various types of strabismus. His idea of operating only on the affected eye, in convergent strabismus, is a departure from the textbook operations and is supported by good reasoning and good results. The article is lengthy and must be read in its entirety to be properly appreciated.

TREATMENT OF DETACHED RETINA

ROBERT SCOTT LAMB, M.D.

WASHINGTON, D. C.

Lamb assumes the relation of endocrine disturbances to detachment of the retina. Three things are required in the treatment of the detachment. First, to change the character of the fluid coming through the eye in view of the amount of detritus and viscosity of the fluid. Second, the removal, if possible, of the fluid lying behind the detachment. Third, the increase of the intraocular tension in order that the retina may be held in place, if once restored approximately to its former place.

The first he accomplishes by use of the Murphy drip, containing 10 gm. of sodium carbonate and 20 gm. of sodium chloride to the liter of water, used daily at first and then every other day. The second is attempted by subconjunctival injections of 1 : 3,000 mercury cyanide solution with 3 drops of 1% acoin once every 7-10 days, according to the amount of reaction. The third is secured by the use of thyroid, increased in dosage from ½ grain thrice daily to the point where symptoms of oversecretion of the thyroid appeared. In addition, fibrolysin was given to increase the leukocytes, accelerating natural repair.

COMMUNICATIONS

THE USE OF WHISKEY IN THE TREATMENT OF DIABETES DISCONTINUED

The Scientific Program at the Philadelphia Session was by many thought to be the best program ever presented by the State Society. The Symposium on Diabetes Mellitus by Drs. Elliott J. Joslin, Boston; Frederick M. Allen, Morristown, N. J.; Edward A. Weisser and Roy Ross Snowden, Pittsburgh; O. H. P. Pepper, Philadelphia, and others, was in itself a valuable postgraduate course for either the general practitioner or the specialist.

The responsibility for improvement in the treatment of diabetes, with methods now available, rests upon the general practitioner rather than upon the specialist. It is most important that the disease be diagnosed by the physician at the earliest possible date and that he then either treat it scientifically himself or else send the patient to some one who can and will give such modern treatment. The day of giving to a diabetic a list of foods that "may be taken" and of those "to be avoided" is past. Many cases can be as well treated at home as in an institution if only the physician in charge and the patient will appreciate the necessity for faithfulness and accuracy in detail.

The successful treatment of diabetes depends upon a carefully regulated diet with exact calculation of the amount of carbohydrates, proteins and fats, and the total calories, each and all dependent on the condition of the urine and the blood. Water, clear broths, coffee and tea without trimmings, cocoa shells and cracked cocoa may be taken without allowance for food content. No alcohol in any form is given. In fact only rarely is any drug indicated or allowed. Dr. Allen, in reply to a question, stated that when at the Rockefeller Institute he gave the patient whiskey during the few days of fasting necessary for the urine to become sugar free, but that he had since discontinued the practice and that now neither he nor Dr. Joslin use any alcohol during any stage of the disease.

C. L. S.

A LITTLE TALK WITH SECRETARIES

Dear Secretaries: Many addresses have been made in which we are told that a live society is largely the result of the activities of the secretary. Many papers have been prepared and read in which the writer tells us that if you want a live society you must, of course, have a live, wide-awake, energetic and forceful secretary. In fact it has been repeated so often that we are inclined to believe at least part of it.

The Medical Society of the State of Pennsylvania realizes this fact, for each year her officers prepare a good program and a most excellent banquet for the Secretaries' Conference during the annual meeting of the State Society. This being true, for there is no denying facts so often expressed and responsibility so clearly placed, may we as secretaries with a great and mighty effort make the year 1921-22 the banner year of the Medical Society of the State of Pennsylvania! We have a society in which we can have considerable pride, for it numbers nearly 7,300 members. But there are about 3,000 eligibles who are not members. A few counties of our state boast of 100% eligible membership and we know that this was accomplished by considerable effort on the part of the active members. Visitations and missionary tours were made and when the eligible was shown what membership in the Society really meant to himself, to the profession and to the common people in general, his name and admission fee were soon secured.

Now this is a hint—when you are not busy, when the roads are fine and a drive through the country is enjoyed by everybody; just plan one of these missionary tours. Get your President, your Treasurer and another good, jolly fellow and go out into the country and call on the man who is isolated, so to speak, from the companionship of his confreres. He will be pleased with your call and at once give name and fee. You will return home so delighted that you will visit the other nonmembers of your own community, who will become so interested that they will all ask, "What must I do to become a member?" Before you are aware you will have your county medical society 100% membership, and with a force 10,000 strong we can march on as the almoners of the human family and continue to be the caretakers of their interests against the charlatans who go about in sheep's clothing but inwardly are ravening wolves—those who promise wonderful results, getting a fee in advance; so many treatments, so many "bones" and in so many cases the patient gives up in disgust, with his money gone. It is against this class of malicious mercenary and illy-prepared impostors that we must take our stand. From the earliest history of medicine it was the medical man's work to plan and care for the human family, to teach them sanitary laws and direct the diet and the general laws of health. It is more imperative for the medical profession to be active and united, to conserve the fundamentals of health than ever before.

At the meeting of each legislature, there are many acts proposed, pleading for recognition of the various cults in the healing art, that the gates may be opened to allow the avaricious and ignorant to flood the healing fields and inundate them with the besmear of illiterate ignoramuses. It is necessary for the secretaries to become active, call in their prospective candidates for legislature to meetings and have some active man give a good paper to show the attitude of the medical profession in its relation to the public. We must show how our profession has searched and labored, not for its own good but for the general good and betterment of the masses. This is a work that must be done, and as the secretary is the so-called active worker in the medical society, wouldn't it be just fine to become a united band and go forward with our work! J. B. F. WYANT.

RESOLUTIONS PASSED BY THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

WHEREAS, Wood alcohol is the most deadly poison used in daily commerce, the port of entry being through the mouth, nose or skin, and

WHEREAS, One teaspoonful has been known to cause blindness and one ounce to cause death; therefore, be it

Resolved, That the manufacture and sale of wood alcohol shall be prohibited by law, punishable by fine and imprisonment.

Resolved, That if sales are permitted the product shall be colored with Methyl Violet as a warning of danger and labeled "Poison—Drinking, Breathing or Rubbing on Skin may cause Blindness or Death."

Resolved, Further, that a special revenue tax shall be imposed sufficiently high to equalize the cost of Methyl alcohol with Ethyl alcohol or with denatured alcohol and that it shall be registered under the head of "Poison Sales," so that its distribution may be recorded and regulated, and in cases of poisoning, its source of origin revealed.

ETIOLOGY OF HEART FAILURE

Believing that heart failure is caused by an infectious process in the heart itself, Theodore B. Barringer, Jr., New York (*Journal A. M. A.*, April 23, 1921) emphasizes the importance of eradicating any focus of infection which may be present elsewhere in the body. It may well be that the removal of such foci will prove to be the most efficacious measure we possess for preventing recurrent attacks of heart failure in patients with chronic heart disease. Barringer analyzed the histories of 154 patients with chronic heart disease with this idea in mind. Five patients gave a history of physical strain immediately preceding the early symptoms, and two of mental strain. In eighteen patients the early symptoms followed directly some infection, like bronchitis or influenza. Of the early symptoms, precordial pain was present thirty-five times. One hundred and seventeen patients showed fever of varying degrees, running a course from three days to many weeks. Sixty-nine patients showed an increase above normal of the polymorphonuclear leukocytes (blood counts were made in 134 cases). Barringer concludes that the fact that 75 per cent of patients showed fever, and that 51 per cent of those in whom blood counts were made showed a leukocytosis, is important evidence that cardiac failure in the majority of instances is a disease of infectious nature in which the site of infection is the heart muscle, or valves or both. The unimportant part which physical or mental strain plays in causing heart failure is shown by the few instances reported, seven out of 154 cases.

RETINITIS OF DIABETES MELLITUS

In the course of a statistical study of the clinical types of diabetes mellitus encountered in the Mayo Clinic, it was observed that retinal lesions had been found only in patients with the mild form of diabetes, usually associated with arteriosclerosis. This observation led to a more careful examination by H. P. Wagner and R. M. Wilder, Rochester, Minn. (*Journal A. M. A.*, Feb. 19, 1921), of diabetic patients for retinal lesions. In about eighty cases of diabetes characterized by acute onset and progressively increased severity, the so-called diabetes gravis, no patient showed retinal changes. Retinitis occurred exclusively in diabetic patients with mild, easily controlled glycosuria in whom evidence of vascular disease was always present. At least twice the authors were able to make a diagnosis from the ophthalmoscopic findings alone in the temporary absence of sugar from the urine. They believe, therefore, that the retinitis of diabetes is the retinitis of cardiovascular-renal disease, modified in appearance and in stage of occurrence, possibly by the metabolic disturbances associated with the diabetes.

PALPITATION AND ITS CLASSIFICATION

With people who suffer from repeated attacks of auricular flutter, Louis Faugeres Bishop, new York (*Journal A. M. A.*, March 19, 1921) claims it is good policy to keep a certain amount of digitalis in the system so that an attack may be more quickly controlled when it occurs. Not all attacks of flutter, however, are converted into fibrillation by digitalis. In many cases the attack terminates abruptly on the use of digitalis, and the heart is at once made regular, except, perhaps, for the occurrence of premature contractions for a short time.

INTRACRANIAL PRESSURE IN DISEASE

The intracranial pressure was determined by Charles E. Kiely, Cincinnati (*Journal A. M. A.*, Feb. 19, 1921), in thirty-one cases. It varied from 25 in a case of taboparesis to 400+ in a case of syphilitic myelitis. In two cases of tumor the pressure was 136 and 160, respectively. Kiley uses an O'Brien needle to which a by-pass is added.

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EDITORIALS

TREATMENT OF EPILEPSY

From time to time there have appeared before the medical profession new methods and therapeutic agents for the treatment of epilepsy. While each has in turn appeared to give promise of possible success, the test of time has failed to demonstrate their efficiency and one after another they have been discarded.

At the present time, there has loomed upon the horizon, luminol, for which much has been claimed and with which much research work has been carried on. Early reports from various investigators were quite flattering, but further observations of groups of cases in institutions have yielded results quite at variance with earlier reports.

Dr. Edward A. Foley, Assistant Superintendent of the Chicago State Hospital, in *The Institution Quarterly*, March 31 and June 30, 1921, reports his findings with a series of thirty-five cases, fifteen male and twenty female patients, each carefully selected with reference to number and severity of seizures. The results of luminol medication were carefully checked over a period of three months by comparison with another group of cases receiving bromide medication.

In the male group, absolutely no change was noticeable either in the number or severity of seizures and luminol medication was discontinued.

In the female group, the convulsions numbered two hundred and five in thirty days under bromide medication. These were reduced to one hundred and twenty-nine the first month, one hundred and twenty the second month, and sixty-six the third month under luminol.

On the surface, these figures would seem to be conclusively in favor of the efficacy of luminol in about 50% of the cases. Considering these cases, however, from other angles a very different picture is presented. Dr. Foly continues in his report: "Notwithstanding the reduction in the number of convulsions, the severity of each convulsive attack of those having convulsions, was greatly increased. Not only did the severity of convulsions in those having attacks increase, but we noticed a marked increase in the irritability of all cases under treatment and the irritability of some cases increased to a deep furor. These furors were more prolonged and intense than ever observed under the bromide treatment. The attacks were so severe in some cases that it was necessary to remove the patient from the epileptic ward to the hydrotherapeutic department for special care and treatment. A few of the luminol group developed a status which terminated with fatal results. At times some were in such befogged state that special hospital care was required. * * * We are getting better results with the old-time bromide mixture and careful regulations in diet."

It would seem, therefore, at the present time that not only has the value of luminol not been demonstrated in the treatment of custodial epileptics, but that its continued use may produce marked untoward effects, even to the extent of death. Unquestionably further observations will be made, but until more light has been thrown upon the results of the continued administration of this drug, especially as regards its untoward effects, the general practitioner should proceed in its use with great caution, especially where his patient cannot be kept under close and intelligent supervision. J. A. J.

THE STATUS OF THE DISABLED SERVICE MAN

There has been much criticism on the part of the laity and more or less by the profession in regard to the great length of time that has been required for the treatment of many of our soldiers who received injuries or contracted disease during the war, without effecting cures or, in many cases, without even reaching that stage in which the patient is believed to be in the best condition attainable by army hospital treatment and is discharged with a certain "degree of disability."

To form an opinion as to whether or no such criticism is justifiable would require investigation into the character of the treatment necessary in these postwar conditions and, too, into the character of the conditions themselves.

It is not our object to give the results of investigations showing the number of soldiers remaining in the army hospitals, the character and results of their treatment, nor the reasons for their prolonged retention, but it is possible to throw some light on the subject by citing a number of cases in one of our army hospitals in which the surgeons, men of marked ability, toiled month after month with conscientious and painstaking application, with varying results, some cases responding to treatment in a gratifying manner, others after many months showing little or no improvement.

Excluding the medical and mental patients, there were four types of cases which required prolonged treatment, namely: (1) chronic osteomyelitis, (2) old empyemas which had been operated upon (some of these seemed to be primary, others followed measles, influenza, lobar pneumonia or gunshot wounds), (3) infected amputations and (4) nerve injuries.

In the first three of these the laboratory investigations were bacteriological and consisted of ascertaining the kind and counting the number of bacteria present in a loopful of pus from each case (or each lesion—some patients had as many as six lesions) twice a week over a period of many months by counting the colonies which would grow in plates of agar-agar to which human blood had been added, the pus being mixed with the blood-agar while melted. As most of the cases were being treated by the Carrol-Dakin method it was necessary to add to the culture medium some agent which would counteract the antiseptic action of the Dakin's solution.

There were over three hundred osteomyelitis cases, several hundred empyemas and several dozen infected amputations, the bacteriological records of which were kept in this detailed manner. By far the most frequently encountered organism was the hemolytic streptococcus, although a number of other organisms did occur, such as the nonhemolytic streptococcus, pneumococcus, bacillus pyocyaneus, colon bacillus, members of the proteus group, staphylococcus aureus—both hemolytic and nonhemolytic—and the staphylococcus albus. After three or four sterile cultures had been obtained the wounds were allowed to close. If, too, the staphylococcus albus was present alone the wounds were allowed to close exactly as though the cultures had been sterile, with no bad results, a fact hitherto unpublished.

A number of metastatic complications which resulted in death occurred in the hemolytic streptococcus infections, such as meningitis, brain abscess, and bacteremia (the hemolytic streptococci being recovered by blood cultures before death and from the interior of the liver, spleen and kidneys at autopsy) and occasionally death followed gradual emaciation from toxemia. When it was necessary to perform operations such as bone grafts, plastics, etc., upon cases which had been infected with the hemolytic streptococcus and had been allowed to close, there was invariably an exacerbation of the infection, and it was found that it required a year of quiescence and noninterference before constructive surgical measures could be resorted to with safety.

The Dakin's solution employed, thirty to forty gallons a day, was prepared in a special laboratory, and made most accurately as it must needs be to obtain good results from its use.

Over a hundred nerve-suture operations were performed in this hospital, with the removal of the neuromas or neurofibromas which formed at both of the ends of the severed nerves. These were examined in the laboratory. Some were found to be infected, some to contain fragments of old sutures, and so on. After such operations the patients were examined weekly by trained observers for the purpose of making "nerve readings," that is, recording the return of the various forms of sensation and power of motion. Electricity and massage were employed in these cases by experts; that is, the physicians who gave the electrical treatments were specialists in that line, and the massage and manipulations were directed by neurologists and surgeons.

When one realizes that these cases, if infected with the hemolytic streptococcus, cannot be operated upon for some time after closure of the wound, and that the return of sensation and motion is a matter of years rather than months, one will not be so ready to criticize because of the slow recoveries. And when one is cognizant of the skill and care which is essential to the welfare of these patients one may appreciate the plausibility of the report submitted to President Harding by Colonel Charles N. Forbes, Director of the Government Veterans' Bureau, recently published in the daily papers after his nation-wide inspection tour, on conditions under which former soldiers have been receiving the "so-called placement training in private shops and establishments," branded by the Colonel as "criminal" and "slavery." He says:

"Fully 30,000 men are being exploited rather than rehabilitated. The men are farmed out in cheap tailoring establishments and mushroom institutions where the only interest to the proprietors or instructors is the amount of money that can be obtained from the government. There are forty or fifty types of these institutions. *The same is true of the contract hospitals.*"

If such be the case it is to be hoped that, through the efforts of Colonel Forbes, these soldiers may be speedily withdrawn from such contract hospitals and placed in army institutions in which they may receive proper care under the direction of competent specialists. G. R. M.

CLOSURE OF CRANIAL DEFECTS

The closure of cranial defects is often advisable as they cause disability due to epilepsy, headache, dizziness, loss of memory, hemiplegia, etc., which is often entirely relieved or greatly ameliorated by such closure. The European War was responsible for many such injuries and we learned from the experience gained then not only that unless there was some definite contraindication, such defects should be closed but also how best to accomplish it. The operation itself is not new but we are in a position to state that after a fair trial the older methods, such as inserting a silver plate, etc., must give way to the better methods now used. As a general rule a foreign body such as a silver plate will cause future trouble, acting as a more or less constant focus of irritation, and in a large number of cases it will be necessary to remove them.

There are several ways in which such closures can now be made and the method best suited to the individual case should be the one selected. Transplants of free flaps of fat and fascia, or of cartilege or of bone are all useful. The flaps of fat and fascia may be taken from the outside of the thigh. The cartilege from the costal cartileges, bone from the outer table of the skull or rib. In the writer's opinion the transplant of a free flap of fat and fascia is the least serviceable of the three and should not be used alone but, if necessary, in conjunction with one of the other two methods. A flap of fat and fascia is not sufficiently strong if used alone to offer a protection to the brain from trauma or to prevent pulsation, which is also an end to be accomplished. If one finds a defect in the dura as well as skull or has to sacrifice a certain part of it, then a flap of fat and fascia can be used to advantage. Whether one should choose a portion of rib or outer table of skull to act as the outer covering depends entirely on the individual case. Primrose (Transactions of the American Surgical Association, p. 174, Vol. xxxvii, 1919) and his colleagues prefer the rib or costal cartilege. Others prefer the outer table of the skull. The writer has used both and has had good results from each one. On the whole, the outer table of the skull will fit more defects than the rib or cartilege can be easily made to do and therefore is the more useful of the two.

J. S. R.

THE PHYSICIAN AND COMMUNITY INFLUENCE

Why does the physician not have the community influence exercised by so many others of like or even inferior standing?

As an individual it cannot be disputed that his influence is great. To no other member of the community is it granted to touch so many lives. To no other member of the community is it granted to maintain such close personal contact with his fellow men. In the home and within the family he exerts a potent influence. He is sought because of a personal regard for his medical ability. He is retained through years of service because of the personal touch which he gives, and when death removes him from his accustomed round his loss is mourned as a personal deprivation. He is frequently revered as is no other professional man in the community. His circle of influence is a wide one, *but* only so wide as those who continue to employ him and to receive his ministration in times of distress.

When we view him in his *organized* activities, however, we see a picture of another color. He is modest and retiring. He regards his organizations solely as a means of greater scientific advancement, fearing that any effort to extend his influence beyond the ranks of his own profession into the realm of community interests may be misconstrued as having motives of personal or financial advancement behind them. He imperturbably permits the growth of cults and of isms in his community that have for their basis ignorance or prejudice and for their motive financial gain on the part of their promoters. He submits to unfair or unwise administration of the laws without registering adequate protest. He continues undisturbed in his individualistic way, exercising his benign individual influence but collectively utterly failing to rise to his high calling of community leader in all movements that affect the health—mental, moral and physical—of the community. He permits the public to remain ignorant of his achievements and of his organization. Here in the home city of the Journal a number of our best-informed citizens have declared that they did not know there was such an organization as the Medical Society of the State of Pennsylvania. They suppose the office is connected with the State Department of Health. Can there be a better illustration of the inadequacy of our touch with the community?

What is the answer?

In this day of coöperation, coördination and organization, to continue in this individualistic path will inevitably be fatal to the best interests of the profession and of the public. To blind ourselves to the facts and make no effort at readjustment to the changing conditions of a new age will be of no avail. Lack of adaptability of a species has always resulted in the eventual death of that species, and it behooves us, therefore, to right about face, to take our rightful place in the march of progress and to exert the beneficent influence that the community has a right to expect from us. Man is no longer a unit in the universe; he is only a part of that larger unit—the community. To have any telling effect his influence must be so magnified by coöperation as to be capable of application to the larger unit.

We believe that the time has arrived when every personal animosity, grievance and expression of discontent should cease. The profession must become as one individual. We must show the public that there is no difference of opinion among us as to community welfare, and that what is for the best interests of the people should be expressed as with one voice. In this way and in this way only can that which has been slipping away from the profession be regained. Our place in the State will become what it should when we are looked to for political and social guidance and consulted in preference to those who advertise their "wonderful knowledge" through word of mouth and the public press. Then we may win back the place our forefathers in medicine held as a sacred trust.

The answer, then, is to abandon the outworn policy of selfish isolation; to take our place in the wider sphere awaiting us. Individually the prestige of the physician will never be assailable. Collectively we stand as one in a trial. But we have magnified our personal importance at the frequent sacrifice of a united profession, with the result that the general public may be witnesses against us. This condition must be reversed and this reversal will come about only by a more active interest on the part of the profession, both individual and organized, in teaching the public, not only the preservation of health and avoidance of disease, but also the fact that regular medicine stands for loyalty to the community and unselfishness of purpose. We must give the community such advice as, if heeded, will keep them from strange and false doctrines and guide them in civic affairs for their greatest good.

EX LIBRIS MEDICI

HISTORY REPEATS ITSELF

In answer to a knock we called "Come in."

The door opened softly, and over the top of the editorial desk we saw a well-known bald head, smooth face, gold-rimmed spectacles, and behind the latter a pair of clear, kindly eyes.

"Don't get up. I've just brought something that I want to read to you."

"You wanted to do that the last time you were here, but you couldn't because you hadn't the book with you, and we didn't have it here, either. Now if you have become a Bible reader, come around on Sunday mornings when we are not busy, and perhaps we will listen to you while we shave."

"Do you know, I love the way you so consistently use the editorial 'we.' I have been watching you for more than a year now, and you haven't missed once."

"Thank you. You are complimentary. Is it because you want to negotiate a small loan or have us do something for you?"

We saw that we had made a mistake. There are some people who never ought to try to joke; or, if they must, should always begin by telling what their intention is. For example, should say: "If I wanted to be funny I should say." or, "if I cared to be satirical, I should say."

We tried to retract—always a bad thing to do—and said, "Never mind, we were joking; if you have something interesting, we will be glad to hear it."

"Well, I am not joking. I am very much in earnest. This morning I had a long talk with Dr. Goodfellow—"

"You mean the diabetes specialist?"

"Exactly. We talked a long time, and I don't want to repeat all he said, but some of it was very interesting to me."

"What was it?"

"He said that the treatment of diabetes was one of the most simple things in medicine. All that was necessary was the skilful carrying out of a definite '*system*.'"

"Well, doesn't that correspond with the generally accepted ideas?"

"Yes and no; it depends upon the *system*. I asked him to give me an idea of the *system* he followed."

"We always understood that he was rather mysterious about it—not in a way to suggest that it was unethical, but rather to signify that when he was ready, and sure of his results, he would publish the whole thing."

"So I thought, but to-day he became confidential, and told me that he really had nothing new, but that he had learned the 'system' from his father, and that they both have practiced it without variation for nearly fifty years."

"Ideas about diabetes have changed a good deal in that time, haven't they?"

"Not with him. Here is what he said: 'Chemical and metabolic studies of diabetic patients are useless; I never make any. As soon as a patient comes to me and tells me that he has diabetes, I set him upon my strict regimen. I correct his diet, and then prescribe for him a long course of Fowler's solution and Cannabis indica. He immediately begins to improve, and often gets well; but the treatment requires months or years to effect a complete cure.'"

"What percentage of his cases reach the 'complete cure'?"

"I was more interested in finding out what percentage of his cases really had diabetes."

"Did he tell you?"

"He doesn't know. A new patient comes in and says he has diabetes, and he accepts the diagnosis, and begins the 'system.'"

"Do you mean to say that he doesn't examine their urines?"

"I asked him about that, and he replied that he used to years ago, but he found that the patients know very well when they have diabetes, and that he has become so expert as the result of having devoted himself to the disease for so many years, that he can make the diagnosis by intuition—I think that was what he called it."

"Good Lord," said a new voice, and looking around we discovered that we had been joined by one of our contributors sufficiently at home to enter by the side door, and take a seat.

"The book I have brought is 'Gil Blas.' Le Sage wrote it in 1715. Gil Blas is one of those peripetetic heroes, always on the road, and always having the most amusing or delightful adventures. Have you read it?"

We, of course, knew about it, but like many others were satisfied not to have taken the trouble to read it.

"In the course of these travels of his, Gil Blas found himself in Valladolid, Spain, where he attached himself to the household of a churchman, in which he met a doctor to whom he later became apprenticed. Let me read what Gil Blas, himself, says about it":

"I staid three months with the Licentiate Sédillo without complaining of bad nights. At the end of that time he fell sick. The distemper was a fever; and it inflamed the gout. For the first time in his life, which had been long, he called in a physician. Dr. Sangrado was sent for; the Hippocrates of Valladolid—a tall, withered, wan executioner of the Sisters Three, who had done all their justice for at least forty years.

"This learned forerunner of the undertaker had an aspect suited to his office; his words were weighted to a scruple, and his jargon sounded grand in the ears of the uninitiated. His arguments were mathematical demonstrations; and his opinions had the merit of originality.

"After studying my master's symptoms, he began with medical solemnity: 'The question here is one of an obstructed perspiration. Ordinary practitioners, in this case, would follow the old routine of salines, diuretics, volatile salts, sulphur and mercury; but purges and sudorifics are a deadly practice! Chemical preparations are edged tools in the hands of the ignorant. My methods are more efficacious. What is your usual diet?'

"'I have lived pretty much upon soups,' replied the Canon, 'and eat my meat with a good deal of gravy.'

"'Soups and gravy,' exclaimed the petrified doctor. 'Upon my word, it is no wonder you are ill. High living is a poisoned bait; a trap set by sensuality, to cut short the lives of wretched men. We must be done with pampering our appetites: the more insipid, the more wholesome. The human blood is not a gravy! Why, then you must give it such nourishment as will assimilate the particles of which it is composed. You drink wine, I warrant you?'

"'Yes,' said the licentiate, 'but diluted.'

"'Oh! finely diluted, I dare say?' rejoined the physician. 'Why this is licentiousness with a vengeance! A frightful course of feeding! How old are you?'

"'I'm in my sixty-ninth year,' replied the Canon.

"'So I thought,' quoth the practitioner, 'a premature old age is always the consequence of intemperance. If you had only drunk clear water all your life, and been contented with plain food, boiled apples, for instance, you would not have been a martyr to the gout, and your limbs would have performed their functions with lubricity. But I do not despair of setting you upon your legs again, provided you give yourself up to my management.'

"The licentiate promised to be upon his good behavior. Sangrado then sent me for a surgeon of his own choosing, and took from him six good porringers of blood, by way of a beginning to remedy this obstinate obstruction. He then said to the surgeon, 'Master Martin Anez, you will take as much more three hours hence, and to-morrow you will repeat the operation. It is a mere vulgar error that the blood is of any use in the system; the faster you draw it off, the better. A patient has nothing to do but keep himself quiet; with him to live is merely not to die, he has no more occasion for blood than a man in a trance; in both cases life consists exclusively in pulsation and respiration.'

"When the doctor had ordered these frequent and copious bleedings, he added a drench of warm water at very short intervals, maintaining that water in sufficient quantities was the grand secret of the materia medica.

"He then took his leave, telling Dame Jacintha, with an air of perfect confidence, that he would answer for his patient's life, if his system was fairly pursued.

"The housekeeper, though protesting secretly against this new practice, bowed to his superior authority. In fact we set on the kettle in a hurry; and as the physician had desired us above all things to give him enough, we began by pouring down two or three pints at as many gulps. An hour after, we beset him again; then returning to the attack time after time, we fairly poured a deluge into his poor stomach. The surgeon, on the other hand, taking out the blood as we poured in the water, we reduced the old Canon to death's door in less than two days.

"The venerable ecclesiastic, unable to hold out any longer, as I pledged him a large glass of his new cordial, said to me in a faint voice, 'Hold, Gil Blas, do not give me any more, my friend. It is quite plain death will come when he will come, in spite of water; and though I have hardly a drop of blood in my veins, I am no better for getting rid of the enemy. The ablest physician in the world can do nothing for us when our time is expired. Fetch a notary, I will make my will.'"

At this point the old man stopped and looked up. As he did so, to my astonishment my fellow auditor abruptly asked, "What did Goodfellow say he gave the arsenic for?"

The answer came without the slightest annoyance. "He said it was an alterative; that it entirely changed the system, and if persisted in, worked wonders."

"And the Cannabis indica?"

"That is given because experience shows that patients who take it long enough get well."

"Good Lord! And that man has a large practice, and makes ten times as much money as I do!"

"Certainly he does. Do you think that Sangrado didn't? Listen to what Gil Blas tells about that, after he became his apprentice."

"Far from wanting employment, it happened by a kind of providence, as my master had foretold, to be a very sickly season. The smallpox and a malignant fever took alternate possession of the town and the suburbs. All of the physicians in Valladolid had their share of business, and we not the least. We saw eight or ten patients a day, so that the kettle was kept on the simmer, and the blood in the action of transpiring. But things will happen cross."

"Do any of his patients die?" asked our contributor.

"Certainly; just listen," and he continued to read:

"But things will happen cross: they died to a man, either by our fault or their own."

"No, no, I mean Goodfellow's cases; do any of them die?"

"Oh, you are still thinking of Goodfellow. Why, yes, of course they do; lots of them. He told me that cases of diabetes were divisible into two classes, those that die and those that don't."

"Good Lord!"

The reading then continued:

"If their case was hopeless, we were not to blame; if it was not hopeless, they were. Three visits to a patient was the length of our tether. About the second we sometimes ran foul of the undertaker; or when we were more fortunate than usual, the patient got no further than the point of death.

"As I was but a young physician, not yet hardened to the trade of an assassin, I grieved over the melancholy issue of my own theory and practice.

"'Sir,' I said one evening to Dr. Sangrado, 'I call heaven to witness, on the spot, that I have never strayed from your infallible method; yet I have never saved a patient. One would think they died out of spite and were on the other side of the great medical question. This very day I came across two of them going into the country to be buried.'

"'My good lad,' replied he, 'my experience comes nearly to the same point. It is seldom that I have the pleasure of curing my kind and partial friends. If I had less confidence in my principles, I should think my prescriptions had set their faces against the work they were intended to perform.'

"'If you will take a hint, sir,' I replied, 'we had better vary our system. Let us give by way of experiment, chemical preparations to our patients; the worst they can do is to tread in the steps of our pure dilutions and our phlebotomizing evacuations.'

"'I would willingly give it a trial,' rejoined he, 'if it were a matter of indifference, but I have published on the practice of bleeding and the use of drenches; would you have me cut the throat of my own fame as an author?'

"'Oh, you are in the right,' resumed I, 'our enemies must not gain this triumph over us; they would say that you were out of conceit with your own system, and would ruin your reputation for consistency. Perish the people, perish rather the nobility and clergy! But let us go on in the old path. After all, our brethren of the faculty, with all their tenderness about bleeding, have no drugs for longevity, any more than ourselves; and we may set off their drugs against our specifics.'"

The reading stopped, and for a time there was silence.

"Good Lord!" ejaculated our contributor.

After this both of our visitors left, and we found ourselves alone asking whether, after all, the world had really changed in the course of the last two centuries.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

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PUBLICITY

Certain daily papers in Philadelphia and Pittsburgh have in recent years taken an advanced attitude toward the dissemination through their news columns of information and advice on questions of public health or sickness prevention. Good newspapers no longer distort a single item taken from a full medical or surgical discussion into a sensational or ridiculous news feature, but they seek the proper officers or committees of accredited medical organizations in their efforts to publish only that which has been approved. The possibilities for public welfare in thus combining the findings of intelligent medical research with the dignified editorial policy of *big* newspapers are enormous.

The recommendations of the Committee on the Conservation of Vision regarding the control of wood alcohol, as approved by the House of Delegates and given to the public press, inspired editorials in various daily papers throughout the state. We quote as follows from the *Philadelphia Public Ledger* of October 6, 1921:

> "Wood alcohol is a deadly poison. But it is hard to distinguish it from the grain distillates ordinarily present in whiskey and other intoxicants. Wood alcohol is being sold to the unwary in diluted forms under fake whiskey labels. It is used in the bootleg trade because it is cheap and easily procurable.
>
> "The amazing thing is that it should have been left for physicians like Dr. Anders and Dr. Ziegler and their associates in the convention of the Medical Society of the State of Pennsylvania to suggest that wood alcohol be deeply colored before it is marketed for any purpose. By that method its sale to people who still seek and buy strong liquor would be made impossible.
>
> "The suggestion advanced by the Medical Society of the State of Pennsylvania ought to be accepted immediately for the future guidance of Congress. If the manufacturers of wood alcohol were compelled to color their product blue it couldn't be used in the various atrocious mixtures now sold as whiskey."

This broad policy of coöperation for public service between medical organizations and the public press must be extended into every county in Pennsylvania.

We recommend that the Secretary or Editor of each component society place the leading newspapers of the county on his mailing list, and that approved items be distributed for publication from time to time.

CREDIT WHERE CREDIT IS DUE

It is undoubtedly depressing to have one's long years of training and experience as a student and practitioner of medicine thoughtlessly classified by one's neighbors or friends with the glaringly inadequate training and abysmal ethical ignorance of most members of the present day popular healing cults. The underlying cause for such ruthless sacrifice of our finer feelings may be found largely, however, in our own false exaggeration of the term *cure*. We all recognize the principle of self-limitation in disease and the marked tendency of most sicknesses toward spontaneous recovery, and yet we continue, as have our predecessors, to magnify the importance of our remedies in the *cure* of disease. We often hasten to assure that if it were not for this beneficent natural tendency of most human ailments toward spontaneous recovery there would be no "cures" by drugless healers; and yet we consciously or subconsciously credit our own ministrations with such cures.

If we as physicians permit our grateful patients to credit our remedies with having aborted typhoid or pneumococcic infections, for instance, we have only ourselves to blame when the same laymen, holding the almost universal high respect for the cure, credit drugless healers with equally ridiculous cures by manipulations or pow-wows.

Let us be honest with the public, but not overly modest, in emphasizing our true rôle in research, diagnosis, prevention and relief of sickness, leaving blatant claims of *cure* to ignorant healers and their uneducated dupes. Let us at the same time incessantly strive for equal educational requirements in the fundamentals of disease, recognition for all who would treat disease, leaving the choice of the system of treatment to all sane adult individuals.

Magnify only the basic virtues of our beloved profession, and rest assured that in due time the truth will prevail.

MINUTES OF THE HOUSE OF DELEGATES

The minutes of the 1921 House of Delegates published in this number contain reports and recommendations that should be of interest to all members of the Society. They are replete with advanced suggestions and recommendations.

The report of the Committee to Investigate the Abuse of Hospitals contains findings and recommendations regarding pauperization that are startling.

The report of the Committee on Community Needs for Hospitals expresses broad views regarding the number of hospitals required, and the *entrée* requirements for attending physicians.

The report of the Committee on Conservation of Vision has already attracted nation-wide attention in the public press.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to October 17:

ALLEGHENY: *New Members*—Horace E. DeWalt, Allegheny General Hospital; Howard C. Heilman, 1744 Brighton Road; Earl P. Wickerham, 7041 Frankstown Ave.; Byron D. White, 427 Chislett St.; Harry P. Smith, 1008 Greenfield Ave.; Hiram D. Ritchie, 707 Jenkins Arcade Bldg., Pittsburgh; Stanley H. Holland, Frank P. O.; Harold K. Lamb, 737 Braddock Ave., Braddock; Robert H. McClellan, 7809 Susquehanna St., Wilkinsburg.

ARMSTRONG: *Death*—L. Dent Allison (Jeff. Med. Coll., '03), of Kittanning, recently, aged 44.

BEDFORD: *Reinstated Member*—Oscar Davis, Lt. M. C., U. S. N., St. Thomas, Virgin Islands.

BERKS: *New Member*—William F. Bennett, State Sanitarium, Hamburg.

BRADFORD: *New Member*—Stanley D. Conklin, Sayre.

CAMBRIA: *New Member*—Lewis R. Thompson, Ehrenfeld.

CENTER: *Reinstated Member*—Scott M. Huff, Officers' House, Hoboken, N. J.

CUMBERLAND: *Transfer*—Elmer E. Geissler, of New Kingston, from Somerset Co.

DAUPHIN: *New Member*—Oscar J. Kingsbury, Steelton. *Death*—Charles H. Smith (Univ. of Penna., '72), of Linglestown, Aug. 30, aged 70.

DELAWARE: *Reinstated Members*—Parker Hitchens, University Club, Washington, D. C.; Samuel R. Crothers, 415 E. Ninth St., Chester. *Transfer*—Samuel Chartock, 526 N. Fourth St., Philadelphia, to Philadelphia County.

ERIE: *Reinstated Member*—Fred C. Hart, Girard.

FAYETTE: *Reinstated Member*—Louis N. Reichard, Brownsville. *Removal*—John V. McAninch, from Alicia to Brownsville.

LEBANON: *New Member*—John D. Boger, Richland. *Reinstated Member*—Edward H. Gingrich, Lebanon.

LUZERNE: *Transfer*—Henry W. Banks, of Wilkes-Barre, from Philadelphia Co.

LYCOMING: *Death*—Victor P. Chaapel, Second Vice-President of the Medical Society of the State of Pennsylvania (Coll. of Phys. & Surg., '92), of Williamsport, October 16, aged 56.

MONTGOMERY: *New Member*—Robert S. Heffner, Pottstown.

NORTHAMPTON: *New Member*—Thomas Dietrick, 60½ Center Square, Easton. *Reinstated Member*—Francis H. Erwin, Freemansburg. *Transfer*—Francis J. Conahan, Bethlehem, from Schuylkill Co.

SOMERSET: *Reinstated Member*—John H. Gardner, Stoyestown.

VENANGO: *Deaths*—William G. Gilmore (Univ. of Pittsburgh, '94), in Emlenton, Aug. 30, aged 57; Edward W. Moore (Univ. of Wooster, Cleveland, '69), in San Diego, Calif., recently, aged 73. *Removal*—Fayette C. Eshelman, from Franklin to 436 Miners Bank Bldg., Wilkes-Barre (Luz. Co.).

WASHINGTON: *New Member*—Thomas L. McCullough, Midway.

WESTMORELAND: *New Members*—Paul C. Eiseman, Latrobe; William P. Nolan, Greensburg; Thomas F. Nolan, Greensburg.

REGISTRATION

We present herewith comparative registration figures that graphically indicate the marked increase of interest among our members in the various sections at our Annual Session.

1921—Philadelphia	1,506
1920—Pittsburgh	1,122
1919—Harrisburg	682
1918—Philadelphia	819
1917—Pittsburgh	875
1916—Scranton	615

1921	*Section*	*1920*
663	Medicine	555
395	Surgery	337
266	Eye, Ear, Nose and Throat	130
110	Pediatrics	69
59	Section not designated	37
38	Guests	32

1921	*County*	*1920*
881	Philadelphia	78
70	Allegheny	600
60	Montgomery	5
41	Lancaster	10
40	Berks	3
34	Delaware	5
25	Chester	3
23	Northampton	5
21	Bucks	2
19	Lehigh	5
18	Dauphin	11
17	Lackawanna	10
16	Luzerne	13
16	Lycoming	15
15	Cambria	17
15	Clearfield	11
13	Schuylkill	4
13	York	6
10	Blair	9
10	Northumberland	3
10	Washington	50
9	Huntingdon	6
8	Bradford	6
8	Clinton	5
8	Franklin	3
7	Montour	4
7	Northumberland	3
7	Lebanon	2
5	Carbon	4
5	Center	5
5	Fayette	18
5	Jefferson	6
4	Columbia	1
4	Erie	10
4	Monroe	4
4	Somerset	7
4	Warren	7
4	Venango	14
3	Butler	11
3	Indiana	8
3	Snyder	0
2	Adams	0
2	Armstrong	21
2	Beaver	23
2	Clarion	5
2	Cumberland	1
2	Elk	2
2	Mercer	15
2	Mifflin	2
2	Tioga	1
2	Westmoreland	49
2	Wyoming	1
1	Bedford	4
1	Crawford	7
1	Greene	8
1	Juniata	1
1	Perry	1
1	Sullivan	0
59	Represented	56

Total number component societies, 63.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of *per capita* assessment has been received since September 15. Figures in first column indicate county society numbers; second column, State Society numbers:

Sept. 20	Northampton	133	7250	$5.00
23	Somerset	46	7251	5.00
27	Fayette	118	7261	5.00
	Montgomery	149	7262	5.00
	Erie	125	7263	5.00
28	Center	30	7264	5.00
30	Delaware	88	7265	5.00
	Lebanon	34	7270	5.00
Oct. 3	Bedford	17	7271	5.00

15	Delaware	89	7275	5.00

(The following new members elected subsequent to June 30. have paid dues for one-half year):

Sept. 15	Berks	134	7248	$2.50
20	Northampton	135	7249	2.50
24	Cambria	126	7252	2.50
	Allegheny	1170–1177	7253–7260	20.00
30	Westmoreland	152–154	7266–7268	7.50
	Lebanon	35	7269	2.50
Oct. 3	Bradford	52	7272	2.50
12	Allegheny	1178	7273	2.50
13	Dauphin	152	7274	2.50
17	Washington	127	7276	2.50

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary
212 N. Third St., Harrisburg, Pa.

IN TIME OF PEACE

In October, 1921, there was held in Philadelphia a most instructive and entertaining session by the Medical Society of the State of Pennsylvania, and from that session we may anticipate the work of the coming year.

The House of Delegates entertained the report of the Committee on Public Health Legislation, which report was thoroughly discussed. There were many other discussions among the members outside of the official session which came to the notice of the officers of the Society which, in themselves, indicate the need of arousing interest along the line of preparedness in time of peace for possible conflict which may occur at a later time. We assume that those who are interested in their own particular line of business do not wait until a legislative session to prepare plans for bills which they desire to be enacted into laws. No more should we of the medical profession lie dormant between one session and the other, but should prepare a constructive plan and program whereby we may protect our own interests as well as the interests of public welfare.

It is of immense importance that we arouse those who do not conceive the necessity of this activity so that they may enter more heartily into a plan by which we can secure the best members, both in the House and Senate, and awaken a desire on the part of voters to exercise their privileges at the polls, both at primaries and elections. Should we not take a leaf from the book of those who circularize the State in their interest and know that the various departments having needed legislation are now campaigning in preparation for the 1923 session. A detailed report of these activities is unnecessary as we have every evidence at hand to show the need of thorough coöperation on the part of the individual as well as the collective influence of the entire profession to meet any emergency which may arise in the future.

It is not our purpose to pose as alarmists, nor to prepare in time of peace for wars which will not come, but we have the feeling that now during the coming winter is the most important period when well-laid plans should be made and expressions received from those who are alive to the interests of protective medicine along the lines of workmen's compensation, local health activities, examination and licensure—in fact all of the many lines which have been the subject of amendments during the past and will be in the future. It is not too early to call to the attention of the county societies the need of carefully investigating the conditions in each county so that a detailed report may be received early. In this report dangers and objectionable conditions that exist should be explained and outlined with suggestions as to the remedies. There are local conditions as well as state-wide problems which must be solved and which are similar to those against which we contended in the compulsory health insurance discussions.

Constructive views should be collected by the members of our society for the purpose of aiding, not only this office, but also the Medical Legislative Conference in expressing the wishes of the profession to our Legislature.

VALUE OF DRUGS IN INTERNAL MEDICINE

That we are now witnessing a cautious revival of the use of drugs in the treatment of disease is the opinion of Lewellys F. Barker, Baltimore (*Journal A. M. A.*, Oct. 8, 1921). In the therapy of to-day, based on more accurate diagnosis and on enlarged conceptions of pathologic physiology, etiology and pathogenesis, a new hopefulness prevails. Available drugs are of real value in curing, in ameliorating and in preventing disease, and new drugs that are useful are steadily being discovered. Adequately to make use of the pharmacotherapeutic means at his disposal for meeting etiologic, functional, indications, the internist must be well trained in normal and pathologic physiology and should have become acquainted with the known facts of etiology and pathogenesis. He should have learned in the pharmacologic laboratory the effects of the more important drugs on the normal animal body; and he should have had opportunity in the hospital wards, and in the laboratory of experimental pathology and therapy, to observe the changes that can be produced by drugs in disease. Very few have as yet had opportunity for the latter, but the medical schools should provide for it in the future. Teaching hospitals at present are, perhaps, more diagnostic institutes than institutes of therapy. It might, possibly, be wise to divide medical clinics into two parts, patients entering one division for general diagnostic study and emergency measures, to be transferred afterward to the other division for full treatment, the effects of which could be carefully studied by the students.

The introduction of new therapeutic methods and new drugs can scarcely be expected from now on to be arrived at by accident, or through pure empiricism. Every new therapeutic agent should be thoroughly tested in the laboratories as regards its activity and its dangers and, later, in the organized clinics, before it is introduced into general medical practice. But results in clinical experience must ever remain the final and crucial test of every form of therapy.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—Henry Stewart, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler--L. Leo Doane, M.D., Butler.
Cambria—John W. Bancroft, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—J. Hayes Woolridge, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. J. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederck R. Bausch, M.D., Allentown.
Luzerne—Walter L. Lynn, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Fred Wade Paton, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—O. M. Weaver, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudshurg.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—W. Gilbert Tillman, M.D., Easton.
Northumberland—Charles H. Swenk, M.D., Sunhury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—John J. Repp, M.D., Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percy E. Whiffen, M.D., McClure.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Martin E. Herrmann, M.D., Dushore.
Susquehanna—H. D. Washhurn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Homer P. Prowitt, M.D., Washington.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—J. F. Trimble, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gihson Smith, M.D., York.

November, 1921

COUNTY SOCIETY REPORTS

BERKS—SEPTEMBER-OCTOBER

At the September meeting of the Berks County Society, Dr. Bruce McCreary, of the Communicable Disease Section of the Department of Health, spoke upon the subject of typhoid fever. He gave a complete report of the incidence of the disease in the state and said that observations made on these cases showed that 80 per cent were milk-born and 20 per cent water-born. Dr. McCreary particularly urged the prompt reporting by telephone of all cases presenting suspicious symptoms to the County Medical Director, or if this is impossible, to Harrisburg. This does not mean that the cases would be quarantined, but that they would be carefully observed, so that possible causes of the infection could be promptly investigated until a definite diagnosis could be made, when the quarantine would commence. Another point emphasized was that the attending physician's responsibility for the quarantine terminated when the case was clinically well, the patient to be kept under observation until two negative cultures have been obtained from the stool and urine.

At the meeting on October 11th Dr. Lewis Fisher, from Philadelphia, spoke on "Newer Methods of Ear Examination." He said that the ear does not only hear; it does more than that. The inner ear has three parts: the vestibule, semicircular canals and the cochlea. The three canals at right angles to each other are filled with fluid which is put into motion by movement of the body and is kept in motion by the hair cells. The stimulation of the hair cells sends the message to the brain.

In experiment of a patient in chair being rapidly revolved, the muscle tactile sense did not tell him which way he was going, but another sense told him. It was the motion sensing mechanism. A deaf mute will fall if his eyes are closed, because this motion-sensing mechanism has been damaged. It is the lymph movement in the labyrinth which causes vertigo and nystagmus, the rythmic slow movement of the eye to one side followed by the quick recoil. In the normal ear, stimulating with cold water will cause nystagmus, in a deaf ear nystagmus will not follow such sitmulation. Vertigo is not necessarily due to disease of the ear, it may be caused by intracranial pressure. Thrombus or hemorrhage and these conditions can be diagnosed through a study of the motion-sensing mechanism. Liver trouble often causes vertigo through affecting the vestibular mechanism. In a patient having vertigo with impairment of responses, the physician must determine if he has toxemia, bad tonsils or teeth or syphilis.

Dr. Israel Cleaver presented a very interesting case of ichthyosis hystrix Negricans, a very rare case. A description of this disease was read by Dr. Werner, a guest of the Society.

The Society passed a motion in favor of establishing a County Tuberculosis Hospital, and also favored the campaign by Saint Joseph's Hospital to raise $40,000, made necessary by the withdrawal of the State appropriation. C. S. Keiser, Reporter.

CENTRAL PENNSYLVANIA MEDICAL ASSOCIATION ANNUAL MEETING

This mutual association of physicians located in the following mentioned counties, held their annual meeting in Tyrone, Pa., at the Y. M. C. A. building the afternoon of Wednesday, Sept. 14, 1921. Counties represented were: Lycoming, Clinton, Huntingdon, Mifflin, Blair, Center, Cambria, Jefferson, Perry, Juniata, Bedford, and Clearfield.

It goes without saying that this year's meeting could not have been excelled in any particular. There were in attendance 119 members, a number far beyond the earliest expectations of this society.

Dr. Jump, president of State Society, was asked to preside over the association meeting, at the request of Dr. A. S. Oburn, of Altoona, Pa., the temporary chairman. Dr. Jump opened the meeting with remarks for the "Good of the Order," referring to the solidarity of the medical profession and its unity of purpose. He referred to the Compulsory Health Insurance Act, and stated that through the State Society Medical Legislative Committee, supported by all the County Societies, this act has been killed indefinitely. He brought us further news in the statement that the Chiropractor License bill failed. What better accomplishments could we wish for from this active committee? Dr. Jump urged all to attend the State Meeting and gain some high points on the wonderful scientific program.

Dr. George W. Crile, Professor of Surgery of Western Reserve Medical College, of Cleveland, Ohio, was introduced and presented "The Goiter Problem" to his appreciative and attentive audience. Some notes taken from his excellent presentation surely will be of interest to those who were listeners, and will cause those who were not, to regret their absence all the more, and compel them not to miss another such gathering, for all who were present stated "Never will I be marked absent."

Dr. Crile opened his remarks by stating that after seventeen years of abdominal surgery he began to notice the high death rate in abdominal operations in patients suffering from exophthalmic goiter, and to inquire "Why this high rate?"

There are millions of goiters in the United States. Goiter is a geological deficiency disease, caused probably by a deficiency of iodine in the thyroid gland. Why do we believe this? Because if we give iodine to animals or children with goiter the goiter disappears.

Marine and Kimball studied and examined a number of school children, again examining the same children one or two years later. Marine's conclusions are interesting: If iodine is given to a pregnant bitch the litter of puppies will not have developed within their thyroid the tendency to fetal adenoma and will not develop goiter. If iodine is given to a pregnant mother and to her offspring up to maturity, colloid or adenoma of the thyroid will not develop. Iodine should be given consistently until the adolescent period is closed, i. e., until 16 to 18 years. After 20 years, given in progressive degrees, iodine does no good. Too much iodine can produce exophthalmos after 20 years. In goitrigenous belts enough iodine should be given to pregnant mothers to prevent fetal adenoma. The giving of it should not be delayed until the goiter develops, but to prevent the development. During adult life iodine and thyroid gland should be given cautiously, as we do not know how much iodine it is safe to give. Any of the iodides may be substituted for iodine as the thyroid removes the iodine content. The proper dose of syrup of ferric iodide for children is 1 drop for each year of age, to be given in water each alternate month.

Goiter in Adults. The x-ray will not do good in cases of colloid or adenomatous types, and they will rarely be cured by iodine or thyroid extract. There are two alternatives to be faced in these cases—either to keep them or remove them. A colloid goiter should be removed only where there is pressure or deformity of the trachea in cases where the goiter is very large. Otherwise why should they be removed? They do not lead to hyperthyroidism nor do they become malignant. Multiple adenomata are always bilateral and should be removed only in cases of tracheal pressure or for cosmetic effect.

Fetal Adenoma. The foundation for this type of tumor of the thyroid is laid during the fetal development. The tumor is usually large and on one or both sides. 95% of cases of cancer of the thyroid occur at the site of fetal adenomata. This is, therefore, a dangerous type. 5% of fetal adenomata operated on are cancerous. In the majority of growing tumors in adults one side or the other is probably carcinomatous. This commonly causes hyperthyroidism, myocarditis, high blood-pressure or marked acute neurasthenia and may develop from fetal adenoma. Therefore solitary fetal adenoma should be removed. Fetal adenoma treated with thyroid gland medication terminates in hyperthyroidism.

Hyperthyroidism. Many cases present themselves already diagnosed. The middle-ground cases are difficult to diagnose. Never use the Goetz test in full-fledged exophthalmic cases. The value of this test is only partial; it is not pathognomonic. The metabolism estimation test was a disappointment. It does not answer the question of diagnosis, nor indicate whether the patient is operable or not, nor show the reserve in the body, but shows the expenditure only; whereas reserve is the factor of safety. However, many times this test helps to differentiate between neurasthenia and a moderate exophthalmic goiter. Basal metabolism has a safety factor of 10 plus and 10 minus, which changes with the patient. It should be used as evidence only. Diagnosis should be based on experience, judgment, history (careful) and physical examination.

Treatment of Hyperthyroidism. The treatment is operative and the recovery permanent. The patient should be under control for from three to six months afterwards. Auto-intoxication and all focal infections should be eradicated. The diet should be carefully regulated and the patient should have plenty of rest.

Mortality Rate. This was 16% at the start, but has been reduced to almost nothing. The operation is done in the patient's own bed with analgesia and nitrous-oxid-oxygen anesthesia. In this way the patient is happy and has no fear. In the last 800 ligations Dr. Crile has had a lower mortality rate than in cases admitted to the hospital; and in the last 100 ligations less reaction of pulse and temperature than in hospital cases. His method is to ligate one side and after three days to ligate the other side, performing the thyroidectomy in three to six months. His mortality rate is slightly over 1%, and he therefore advises early operation in cases of hyperthyroidism.

At the conclusion of Dr. Crile's masterly presentation he responded to the many interesting questions asked him, thus bringing out many details not mentioned in his discourse. As usual the discussion was very enjoyable.

Dr. Albert P. Brubaker, Professor of Physiology of Jefferson Medical College, Philadelphia, was then introduced and gave to his audience a real presentation of the question of carbohydrate metabolism. The following notes are from his talk and they will recall to us all their importance and bring back the days when we thought we never could understand metabolism, but any one hearing Dr. Brubaker could not but have gone away feeling that this whole subject was clearer than ever before.

Dr. Brubaker said that the metabolism underlying diabetes is difficult to understand. Diabetes cannot be cured but the patient's life can be prolonged, even though the abnormal metabolism is not cured. Metabolism brings about liberation of heat and energy. Diabetes is a name applied to a group of symptoms caused by want of oxidation or burning of sugar. When this oxidation fails, sugar accumulates in the blood and is eliminated through the urine and the body loses a large part of its necessary heat and energy. Later, metabolism attacks the fats and proteins and the removal of alkalies causes acidosis.

The failure of oxidation is due to: 1, Enzyme of muscle itself; 2, Pancreatic hormone. Dr. Brubaker then explained the method of making sugar from protein when carbohydrates are eliminated from the diet and said that the appearance of fat acids in the urine is due to incomplete fat oxidation. Acidosis is the removal from the blood and tissues of alkaline bases. An accumulation of carbon dioxide in the blood brings on coma and its removal is accomplished by combining it with an alkali. Therefore sugar should be given. This undergoes partial oxidation, the pancreas slightly recovers and at once fat metabolism ceases.

James S. Taylor, Reporter, Blair Co.

CHESTER—SEPTEMBER

The regular monthly meeting of the Chester County Medical Society was held at the home of Mrs. W. W. Montgomery at Glenmoore on Tuesday September 20th. This was one of the best attended meetings that has been held for a long time, and the efforts of Dr. Johnson as manager of the occasion, coupled with the charming hospitality of Mrs. Montgomery and her assistants, made the occasion a really great success, and did much to stimulate still greater interest in the meetings which have already become an event looked forward to by every physician.

The meeting was called to order by Dr. Jackson Taylor, vice-president, in the absence of Dr. W. N. Smith of Phoenixville. It was moved, seconded, and carried that the physicians who had been in attendance upon the late member, Dr. Robert Cary, in his last illness be appointed as a committee to draw up a suitable memorial to be spread upon the minutes of the Society.

Dr. William T. Sharpless of West Chester read a most comprehensive and interesting paper on the affections of the Myocardium. Those who were fortunate enough to hear this paper agreed that Dr. Sharpless presented the subject not only in a clear and understandable way, but also stimulated more thorough study of this condition in general practice. He first emphasized the importance of estimating the power of the myocardium by clinical methods such as the use of the sphygmomanometer, the pulse before and after exercise etc., and adjusting the life of the individual in such a way that the strain on the heart muscle is not excessive. He then gave a brief outline of the pathology of myocardial disease and the changes that were frequently met with in practice. He stated that hypertrophy of the organ could be accurately determined by careful percussion, and that this was a most important matter for determination in all cases of heart disturbance. Auricular fibrillation is met with most frequently where there is cardiac hypertrophy. Actual dilatation of the heart is due to failing tonicity of the myocardium.

Dr. Sharpless laid much emphasis on the fact that high blood pressure may be mechanical, from narrowing of the lumen of the arterioles and thus increasing the resistance to the flow of blood, or nervous through the sympathetic system when the vessels are tonically contracted. High blood pressure may precede actual heart failure up to the antemortem fall. He then gave a brief summary of the symptoms of heart failure: cardiac arrythmia, sinus arrythmia, pulsus alternans, auricular fibrillation, heart block, and extra-systole, giving the significance of each from a clinical standpoint. Angina pectoris, he stated, was due to overstimulation of an exhausted heart, and was relatively infrequent in women. In discussing this condition he very aptly described the symptoms presented by some of his patients, and classical examples of angina pectoris in certain characters in history, notably Thomas Arnold.

Dr. U. G. Gifford, of Kennett Square, opened the discussion, calling attention to the fact that the best research along the lines of heart diseases had been done by the English. He emphasized the importance of a study of the myocardium as contrasted with that of valvular lesions, and earnestly advised treatment which would not allow of exhaustion of the heart reserve. He also spoke briefly upon the action of digitalis and the most satisfactory methods of administration.

Dr. Shoemaker, councilor of the State Medical Society for this district, then addressed the Society, calling attention to the work which the legislative representative of the Society had done during the last session of the Legislature. The Chiropractic bill failed to pass the House, even though the Chiropractors had spent $22,000.00 in their efforts, while the State Medical Society had spent but $3,000.00. The employment of a trained man at Harrisburg was undoubtedly the best method of combating vicious legislation. He also stated that it would be of great advantage to the profession to have a physician in the Legislature.

Following the meeting the members were entertained at lunch by Mrs. Montgomery, to whom a hearty vote of thanks was extended.

Henry Pleasants, Jr., Reporter.

SEVENTEENTH CENSORIAL DISTRICT MEETING

The eighteenth annual meeting of the Seventeenth Censorial District of the Pennsylvania State Medical Society convened at Sunbury, Northumberland County, Wednesday, September 7, 1921, Dr. W. T. Graham, president, presiding.

The meeting was called promptly at 11 o'clock a. m Owing to the absence of Dr. Luther B. Kline, secretary, Dr. C. H. Swenk, Sunbury, was elected secretary pro tem. Dr. George A. Deitrick, President of Northumberland County Medical Society, in a few well chosen remarks, welcomed the visitors to Northumberland County. This was responded to by Dr. F. R. Clark, Berwick.

A paper, Hospital Commitments: Duty of the Community to the Patient, by Dr. H. V. Pike, Community and Clinical Director, State Hospital for the Insane, Danville, was very instructive, interesting and ably presented. The discussion of this paper by Dr. J. Allen Jackson, Superintendent of the State Hospital for the Insane, Danville, was almost a paper in itself. The plea of both Drs. Pike and Jackson was more thought and care in the preparation of commitment papers by the general practitioner, as fifty per cent of those committed to insane hospitals are returned to their own community on furlough and the proper preparation of their papers means much, not only to the patient, but the institution. On motion the meeting adjourned for dinner to convene again at one-thirty p. m.

The afternoon session was called promptly at one-thirty and proceeded to the election of officers and place of meeting for 1922. Bloomsburg, Columbia County, was selected and the time September, exact date to be fixed by the district censors. Dr. Bruner, of Bloomsburg, was nominated for president, and Dr. Kline, of Catawissa, for secretary. There being no further nominations the nominations were closed and Drs. Bruner and Kline were unanimously elected to their respective offices.

Dr. MacCreary, representing the Pennsylvania State Department of Health, was then introduced and gave a ten-minute talk on Quarantine with Special Reference to Typhoid Fever. He closed with a message from Commissioner Martin, asking for the coöperation of all physicians in the fight against typhoid and a request that doctors report (by telephone, if possible, reversing the charge) all cases of typhoid fever and suspects at the earliest possible moment, thereby giving the department a chance to check the advance of this disease in a community.

Dr. W. S. Brenholtz, of Williamsport, Councilor for this district, being present, was introduced and gave a fifteen-minute talk on Coöperation in Organized Medicine.

Dr. Barton Cook Hirst, Professor of Obstetrics, University of Pennsylvania, the guest of honor, took as his subject, Operative Technic of the Commoner Diseases of Women. For one hour we were most delightfully entertained and it took us back to the good old days when we sat on the benches trying to absorb a little knowledge from a master mind, the only difference being that we were inclined to be a little indifferent at that time, while now we appreciate and thirst for the opportunity to be present at a talk of this kind. The best compliment we can pay Professor Hirst is the sentiment of the meeting, man for man, and that is, "I wouldn't have missed that talk for anything." We extend to Professor Hirst our grateful thanks for and appreciation of his visit with us.

The following physicians registered their attendance:

Northumberland County—Doctors Graham, Swenk, Reese, Cressinger, Thomas, Becker, Trist, Wentzel, Deitrick, McDonnell, Eister, McCay, Marsh, Gass, Ranck, Geise, Flannigan, Samuel.

Columbia County—Doctors Clark, John, Yost, Wintersteen, McHenry, Shuman, Robbins.

Montour County—Doctors Free, Newbaker, Paules, Jackson, Pike, Sandell.

Snyder County—Doctors M. E. Wagner, J. O. Wagner, Herman, Hassinger, Miller, Johnson.

Union County—Doctors Steans, Gundy, Leiser.

Mifflin County—Doctors Smith, Shambaugh, Barnett, Clarkson.

Lycoming County—Doctor W. S. Brenholtz.

Philadelphia County—Doctor Barton Cook Hirst.

There being no further business the meeting adjourned. Charles H. Swenk, Secretary Pro Tem.

SIXTEENTH CENSORIAL DISTRICT MEETING

The sixteenth Censorial District has not held a meeting for several years but that held on October 13, 1921, was of sufficient importance to signify the interest shown on the part of the members of Blair, Cambria and Clearfield Counties which comprise the district.

The day was beautifully clear and more inviting to an outdoor ramble than to an indoor scientific discussion. Nearly 100 members of the profession from the several counties gathered at the Susquehanna Club and were entertained by the Cambria County Society.

The program was as follows: Dr. Howard C. Frontz, councilor, presided. The address was delivered by R. R. Snowden, M.D., of Pittsburgh on the subject of Nephritis. This address was replete with the latest information regarding the disease, both acute and chronic. The paper dealt largely with diagnosis and treatment and was enjoyed and discussed. The next paper was entitled "The Doctor in Politics" delivered by Frederick L. Van Sickle, M.D., executive secretary of the Medical Society of the State of Pennsylvania. He discussed the condition of the profession from the political viewpoint, giving his experiences in the last two sessions of the Pennsylvania Legislature and pointing out the need of individual political activity on the part of every member of the sixteenth Censorial District.

J. Moore Campbell, M.D., chief medical director of the State Department of Health spoke on "Public Health Work in Pennsylvania." This discussion dealt largely with typhoid fever, how it is spreading and the means which should be employed to prevent infection, also advice which should be given to the public regarding this disease. The last paper was by Howard C. Frontz, M.D., trustee and councilor of the District. He presented the work of the State Society as viewed by the Councilor, discussed the Philadelphia Session and pointed out the many important things necessary to increase the activities of county societies. He also pointed out the aid which county socities can lend to the State Society work.

A motion prevailed expressing the thanks of those present to the Cambria County Medical Society and to Dr. C. B. Milhoff, individually, for the pleasure and profit of the meeting. A vote of thanks was also given to the gentlemen who addressed the meeting for their instructive and entertaining addresses.

At five o'clock an elaborate dinner was served in the club house which was enjoyed by 70 or more of the members who remained. The general consensus of opinion was that the afternoon was well spent and profitable in every degree, and created a desire for further meetings of this kind in the district.

Joseph D. Findley,
Secretary of the Meeting.

WASHINGTON—OCTOBER

The regular monthly meeting of the Washington County Medical Society was held on Tuesday, Oct. 11, 1921, in the new Armory Building, Washington, at 2 o'clock p. m. There was a good attendance. Drs. Martin, Corwin, and Thompson rendered interesting reports of the recent State meeting at Philadelphia. After carrying out the usual business program, the Society was entertained and greatly instructed by a talk on "Possibilities of the X-Ray," by Dr. W. O. Quimby, of Wheeling, W. Va. This was profusely illustrated by films and plates of interesting cases which had occurred in his practice. The point upon which Dr. Quimby naturally placed great emphasis was that no matter how fine a negative was made, it must be correctly read and interpreted to get good results. He also spoke briefly of x-ray therapeusis and treatment by the use of radium. The whole talk was a real intellectual treat and the members of the Society feel deeply indebted to Dr. Quimby.

H. P. Prowitt, Reporter.

IN MEMORIAM

DR. E. W. MOORE

We are once more called upon to record the fact that the "grim reaper" has visited our ranks, and removed from us two of our beloved friends and co-workers, Dr. William G. Gilmore and Dr. E. W. Moore. It is of the latter that I wish to speak, as I was intimately acquainted with him.

It is my privilege at this time to pronounce eulogy of our late colleague, Dr. Edwin W. Moore, and to pay high tribute to his many estimable qualities as a physician and friend. Many incidents of our early acquaintance throng my mind, and fond recollections bring to view many scenes of our professional work together, where his keen observation and skill as a diagnostitian, won my high admiration. He was quick in his reasoning to a conclusion, and in summing up, in his unique but forceful expressions, which were characteristic, as some of our older members will remember in listening to his papers often read in our hearing. His diagnosis of cases was invariably correct, his judgment of treatment was sound and founded on keen observation and practical experience. He was always willing and anxious to call in other physicians in obscure cases. He was sympathetic with other doctors, glad to aid them with his counsel, and was never known to obtrude his own opinon before the patient as the only correct views. He was precise and punctilious in matters of professional etiquette. During the many years when he was our secretary, his gentlemanly courtesy, efficient, careful and prompt work, his kindly greetings, and many lovable qualities, endeared him to his professional associates.

He was also a member of the State Medical Society and the American Medical Association. His love for the profession (the Venango County Medical Society was his idol) was only excelled by his love for his family, a more devoted husband and kind and loving father never blessed the earth.

When he was physician to the County House, and county coroner, we often met professionally, and I ever found him the kindly, courteous gentleman, the soul of honor, and a true disciple of medical ethics of the old school type. As a counselor he was ready, apt, accurate and to be trusted. His professional life was strictly ethical, and above all he detested shams.

To his wife and daughters we can only say, your loss is our loss. Our heartfelt sympathy goes out to you, because of our close relationship to your husband and father, and our high appreciation of his worth and attainments.

Dr. Edwin W. Moore was born 1848 in Coolspring Township, Mercer County, Pa.; died July 31, 1921, in Memorial Hospital, New York City. For forty years he was a practicing physician in Franklin. He was a great-grandson of Gen. David Mead, who served in the Revolutionary War, who was the founder of Meadville, and was a direct descendant of William Mead, who came from England to Stamford, Conn., in 1649. After having graduated from Oberlin College, he took his medical degree at Charity Medical College, Cleveland, O., at the age of 21. Though the youngest of the class he was elected valedictorian. He engaged in the practice of medicine at Kenton, O., and removed to Franklin in 1871, where he continued in practice for 40 years.

In 1873 he married Miss Effie Bleakley, of Franklin. The year 1911 he removed to San Diego, Cal., where he resided until two months before his death. For many years he was secretary of our society, and during this time he frequently wrote and spoke on medical subjects. At one of our meetings at Monarch Park, a few years ago, he read a paper giving the early history and organization of the society and of the early doctors of Franklin, which is worthy of a place in the archives of our society.

During his long and busy life he was deeply interested in all advancement in medical and surgical science, and it was said by the eminent physicians who attended him in New York during his last illness, that his knowledge and appreciation of the latest achievements in therapeutics and surgery were as keen as if he were still actively engaged in his profession.

Dr. Moore is survived by his wife and two daughters, Mrs. John L. Hanna, of River Ridge Farm, and Mrs. Frederick D. Hull, New York City.

G. W. Dille, Cooperstown, Pa.

HIRAM M. HILLER, M.D.

Whereas, It has pleased God to remove from our midst our friend and colleague, Dr. Hiram M. Hiller; and

Whereas, It is fitting and right that we should give expression to our deep sense of personal loss, and extend to Mrs. Hiller, and near relatives, our heartfelt sympathy in this their time of bereavement; therefore, be it

Resolved, That bowing to the will of God, we express deep sorrow for the loss of a faithful member, one who was untiring in his work to help the sick and unfortunate, and always ready to respond to their calls. His character and his desire to do good, his love for his family may well be followed; therefore, be it

Resolved, That these our sentiments of sympathy be spread upon the minutes of the Society, and a copy of the same be sent to The Pennsylvania Medical Journal and to the bereaved family.

Delaware County Medical Society.
George H. Hughes, M.D.,
C. E. Feddemen, M.D.
Committee.

VICTOR P. CHAAPEL, M.D.

Whereas, In obedience to divine law, one of our honored members, and the late President of the Lycoming County Medical Society, Dr. Victor P. Chaapel, has been called upon to take that great adventure which means the yielding up of material existence; and

Whereas, Knowing that we must sooner or later, one and all yield to the operation of that same law; be it therefore

Resolved, That we, the Lycoming County Medical Society, extend to his family that sympathy which, in a measure, soothes the wounds of separation; be it further

Resolved, That a copy of these resolutions be spread upon the minutes of this Society, that a copy be delivered to the family and one to the daily press.

Lycoming County Medical Society.
Waldo W. Hull,
Chas. A. Lehman,
Albert F. Hardt,
Committee.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Minutes of the Proceedings of the Medical Society of the State of Pennsylvania

The Seventy-first Annual Session, held at Philadelphia, October 3, 4, 5 and 6, 1921

MINUTES OF THE HOUSE OF DELEGATES

Monday Afternoon, October 3, 1921—First Meeting of the House of Delegates

The House of Delegates met in the Junior Room of the Bellevue-Stratford Hotel, and was called to order at 3:20 p.m., by the president, Dr. Henry D. Jump, Philadelphia.

The Committee on Credentials made a preliminary report and reported a quorum present.

The president thereupon declared the House of Delegates duly constituted and ready for the transaction of business.

There being no objection, roll call was dispensed with.

The next order was the presentation, correction and adoption of the minutes of the Seventieth Annual Session.

Dr. Walter S. Brenholtz, Williamsport, moved that the minutes of the last session (1920) be adopted as published.

Seconded and carried.

The president stated that the order of business was published in the program, and asked what was the wish of the House in regard to the same.

Dr. Edward B. Heckel, Pittsburgh, moved that the order of business as printed in the program be adopted with the addition that unfinished business be inserted between the reading of correspondence and new business.

Seconded and carried.

President Jump addressed the House of Delegates as follows:

Members of the House of Delegates:

In opening this seventy-seventh session of the Medical Society of the State of Pennsylvania I want to speak to you briefly of the state of the Society and review in part the work of the past year. My presidential visits, in connection with information gathered from other sources, have given me the impression that the county societies, our component parts, are better organized than they have ever been before. We have in this Society a compact, well-balanced organization, capable of exerting a great influence for the welfare of the people. The protection of the medical public lies in our hands almost entirely. We can go before the Legislature asking for wise health legislation and opposing pernicious acts with a confidence we have never had before. The profession received from the Legislature at its last session more consideration than has ever been accorded in the past. Two factors have produced this desirable solidarity. One of these which is constantly operative, is the activity of your trustees and councilors. These officers work all the year, while this House of Delegates meets but once a year. Individually and collectively they have worked assiduously for our welfare. The Society is fortunate in having such a body to represent it. The second factor has been the need to oppose certain proposed legislation. Never has the welfare of the profession been so greatly threatened. Having a common condition to combat and a common purpose to urge us on, there has come a unity of action on the part of the county societies which has been admirable. It devolved upon our Public Health Legislative Committee working in connection with the Medical Legislative Conference, to combat this legislation. The chairman of our committee, Dr. George A. Knowles, was made the chairman of the Conference. Dr. Knowles exhibited farsightedness, judgment and wisdom in handling these affairs which was remarkable and to him must be given the credit for the success which has followed the efforts of the Conference. No one who is not in touch with the work, knows the great amount of strenuous effort he gave to protect your material interests.

He was ably seconded by the Secretary of the Conference, Dr. Krusen, of Norristown, representing the Pennsylvania Homeopathic Medical Society. These two were supported unanimously by the other members of the Conference. But to two men in the Conference must I pay a tribute: Dr. S. J. Miller of Clearfield County, and Dr. Joseph G. Steedle of Allegheny County both members of our committee. In spite of all political exigencies which arose, they stood steadfast and insisted that the committee which they headed give us fair treatment. That was all they asked; they had no selfish purpose; they asked only that the public be protected.

Two years ago a Commission was appointed to study Compulsory Health Insurance. The Legislative Conference studied this subject fully and offered arguments to the Commission, showing the inadvisability of such action from the medical standpoint. Their opposition was an important factor in bringing about a negative report by the Commission.

As the world becomes better settled and gets its feet more firmly on the ground again, I feel that the wave of communism which has engulfed certain portions of it and has materially affected all parts, will gradually subside and we may look for less of this communistic propaganda than there has been in the past.

We know, and the public must ultimately learn, that individualism in medicine plays an important part in the welfare of the people whom we are called upon to treat, and that communism, or more properly paternalism, means mediocrity in medicine.

The Conference vigorously opposed the bill which proposed to license chiropractors. Their opposition was on the ground that the bill did not require an adequate knowledge of the structure, functions and diseases of the human body nor preliminary education enough to permit one to study such subjects properly. They contended that without a knowledge of these fundamentals no one should be licensed to heal the sick. The legislators decided that the people should be thus safeguarded and the bill failed to pass.

The Conference was instrumental in the presentation of a broad general medical practice act which would govern all who offered to heal the sick. It applied to cults and systems which exist now or would come into existence later. This bill failed to pass. I trust a similar effort will be offered at the next Legislature. This state should compel practitioners of all sorts to show the same knowledge of the basic principles of medicine and then permit them to practice any system they elect. In this way only and not by a multiplicity of examining boards will the people be properly protected.

I cannot speak of the work done by all of the committees but you may be informed of their activities by reading their reports which have been printed and given to you. But of two new committees I want to say a word. One of these is the subcommittee on postgraduate work authorized by you last year. This committee, headed by Dr. Donaldson, arranged postgraduate meetings in four separate places in the state. The success of these was notable. Dr. Donaldson is enthusiastic about this work and all who participated are satisfied that it should be increased during the next year.

The other was the committee on hospital facilities in rural districts, formed at my suggestion last year. This was headed by Dr. Foulkrod of Philadelphia. The committee has worked hard in gathering statistics and other information about the situation as it stands to-day. They feel that the growing scarcity of physicians which exists in certain localities may be overcome by the institution of proper hospital facilities. They have made a preliminary report and I hope the House will see fit to continue this committee.

In closing, I want to express my thanks to the other officers of the Society for the help and coöperation which they have given me in all the duties I have had to perform.

The president stated that there were twelve or fifteen reports to be referred to the Reference Committee on Reports of Officers and Standing Committeees. It has been customary in the past to refer each one of these reports as it has been published. He asked whether there was any objection to referring these reports in bulk to the proper committees.

Dr. Edward B. Heckel, Pittsburgh, moved that all of these reports with the President's Address to the House of Delegates be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

The president stated that there were reports of two committees which had not been published, one on the Conservation of Vision and the other the report of the Committee on Community Needs for Hospitals.

Report of the Commission on Conservation of Vision

To the President and Members of the House of Delegates of the Medical Society of the State of Pennsylvania:

We desire to submit the annual report of the Commission on Conservation of Vision, covering recommendations on two issues of the greatest importance to the general public and necessarily requiring the hearty support of the medical profession in order to impress the governmental authorities of Pennsylvania with their economic value, and the necessity of their enactment into legislation.

The "laws of economics" are gradually bringing about the abolition of wood alcohol. The State Act of 1919 has accomplished wonders in the hands of our Commissioner of Health, Dr. Edward Martin, but Section 2 should be revised since it permits its use in liniments. As applications to the skin cause blindness this section (2) should be omitted or amended.

The "law of self-preservation" demands that we should establish sane "Regulations for Drivers of Motor Vehicles." Those outlined are based on those now established to regulate the motor traffic in London.

Respectfully submitted,
S. Lewis Ziegler, Chairman,
Commission on Conservation of Vision.

Recommendations, Commission on Conservation of Vision.

Whereas, Wood Alcohol is the most deadly poison used in daily commerce, the port of entry being through the mouth, nose or skin, and

Whereas, One teaspoonful has been known to cause blindness and one ounce to cause death; therefore, be it

Resolved, That the manufacture and sale of wood alcohol shall be prohibited by law, punishable by fine and imprisonment.

Resolved. That if sales are permitted the product shall be colored with Methyl Violet as a warning of danger and labeled "Poison—Drinking, Breathing or Rubbing on Skin may cause Blindness or Death."

Resolved, Further, that a special revenue tax shall be imposed, sufficiently high to equalize the cost of methyl alcohol with ethyl alcohol or with denatured alcohol and that it shall be registered under the head of "Poison Sales," so that its distribution may be recorded and regulated, and in cases of poisoning its source of origin revealed.

Regulations for Drivers of Motor Vehicles.

1. The applicant for a license to drive a motor vehicle must be free from any physical disability that would interfere with his driving capacity, such as loss of arm, leg, hand, foot, vision or hearing.
2. The applicant for renewal of such license shall be required to certify that he has not suffered from any physical disability during the past year that would diminish his driving capacity.
3. If a licensed driver meets with an accident attributable to visual or other physical defect, his license shall be revoked.
4. The applicant for a license to drive a motor vehicle must demonstrate his ability to steer around corners, avoid obstacles, reverse to curb and otherwise manage his motor mechanism.
5. Special visual certificates shall be required of applicants to drive motor vehicles, the requirements of which are as follows:
   - (a) Visual acuity of at least 20/40 in one eye with or without glasses.
   - (b) Normal field of vision (hand movements).
   - (c) No manifest squint or double vision.
   - (d) No night blindness.

Report of Committee on Community Needs for Hospitals

There are two premises which we believe enter into the successful practice of medicine in any community.

The first is that, inasmuch as the ethics of our profession preclude any one holding a patent on any particular method of curing diseases, this tenet to-day must be made to include the impossibility of any large city having within its border any more accurate or any more scientific method of treating diseases than the smallest town in any community, if we wish to advance medicine to its highest pitch in civilization.

The second premise is that, if the first is true, the best and most recent discoveries should be in the hands of every physician in every part of the state so soon as they are in the large cities, and the public have the right to demand that each district shall furnish to its doctor such facilities as will enable him to practice the best medicine and save the most lives.

Twenty years ago serious illness or surgical cases were left to the large cities and medical conditions were treated at home. The laboratories in many of our large hospitals had not been built or developed. Since that time we have seen the building of the large and well equipped laboratory at Harvard, at the University of Pennsylvania, Jefferson, and all of the other large teaching colleges in the Western States.

The merest surface scanning of the situation would lead you to conclude that the physicians trained in these well equipped laboratories would be unable to give their patients the most modern attention unless they had at their command such a laboratory for the investigation of diseases. The development of nursing and scientific care of the patients has progressed side by side with the laboratory, and surgery has made rapid strides in that same time. We should, then, develop a program, and by concerted effort see that each community is impressed with the necessity of furnishing for its physicians such hospitals as will secure these attentions. We believe that this will be the strongest argument against Health Insurance ever presented.

This committee was appointed to take up the first step in this matter.

A majority of the committee made a pilgrimage to the Grand View Hospital at Sellersville, and taking this as a type of successful hospital serving a large suburban community, endeavored to find out the points which had made such a hospital successful.

We believe these conclusions fair: such a hospital welcomes patients from all reputable physicians in that district and refers them back to him, or encourages his attention while they are in the hospital, a square deal to the physicians of the district; a superintendent or medical director gifted with common sense and executive ability; a community awake to the needs of such a hospital. In this quarter must come our biggest educational drive. The cost of applying scientific medicine had advanced so rapidly that communities and cities are starving our hospitals and nullifying their efficiency because of an unwillingness to invest enough in modern equipment. The hospital is to-day as important as the public school. Of sixty-seven counties examined, fifteen had no hospitals, although some were served by adjoining counties. The industrial and mining centers were better served than the purely agricultural. Even our larger cities are to-day inadequately supplied.

A questionnaire sent to sixty hospitals in suburban centers was answered by about one-half.

There are about 576 hospitals, sanitoria and insane hospitals in the state. Two hundred and eighteen of these are in Philadelphia and Pittsburgh, supplying a population of 2,931,652 people, or one hospital to about 13,450 people. In the smaller cities and country, 5,728,390 people are supplied by 358 hospitals, or one hospital to 16,000 people. At this point the report is incomplete, because insane hospitals and other special forms are classified as hospitals.

It is difficult at present to determine how much general and emergency work each institution handles. However, a survey of the epitome will show this important point: most of the outlying hospitals are serving more than their reasonable quota of population, some up to 50,000 or even more. Many of these hospitals are fully equipped and are doing work which compares favorably with that of large city institutions. Many of them are developing a group practice, and while this report carries no brief for that particular type of work, inasmuch as we are pleading for open hospitals to whose facilities all members of the State Society shall have access, yet we are inclined to believe that the only plan by which the suburban districts can retain adequate medical attention is by some form of division of labor.

Questionnaire Sent to Sixty Pennsylvania Hospitals Outside Large Cities

I. Name of the Hospital?
II. Is Your Hospital a Private Institution?
III. How Large a Capacity?
IV. Do You Receive State Aid?
V. How Large a District Do You Cover?
VI. Is Your Hospital Open to All Physicians in Your District Who Are Members of the State Society?
VII. What Are Your Laboratory and X-Ray Facilities?
VIII. Does Your Work Include Major Surgery and Maternity Cases?

(The replies received from twenty-seven hospitals in widely separated county centers of Pennsylvania are on file in the office of the Secretary.)

We, then, would recommend (1) that the Committee be continued under the guidance of some one able to visit localities not having hospitals and that a determined effort be made to impress on each county society the advantages of a modern hospital within its borders.

(2) That the State Society should keep permanent records of these investigations and endeavor to secure for all people of this state the most advanced medical attention. This could be done by having a clearing house through which any group or individual physicians might secure moral support in establishing a hospital where such an institution is needed.

The State Society is the only impartial body capable of taking up this burden of a sympathetic postgraduate elevation of the practice of medicine.

Respectfully submitted,
Collin Foulkrod, Chairman.

Dr. Edward B. Heckel, Pittsburgh, moved that these reports be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

The President asked whether there were any other committees that had not made a report.

Dr. H. B. Gibby, Wilkes-Barre, presented a report of the Special Committee on Investigation of Hospital Abuses, as follows:

To the Members of the House of Delegates of the Medical Society of the State of Pennsylvania:

The special committee appointed by the President for the investigation of Hospital Abuses, submits herewith the following report:

At a meeting held in Wilkes-Barre, February 25, 1921, evidence was presented to the Committee to the effect that in several of the hospitals receiving state aid, patients who are abundantly able to pay both for hospital board and surgical or medical treatment were being treated either as charity or part charity patients, thus increasing the burden on the State Treasury, and having a tendency to pauperize the individual so treated.

Various remedial measures were discussed, and it was finally decided to take up the matter with the Auditor General's Department, and accordingly the next meeting of the Committee was held at Harrisburg, March 23, in the Auditor General's office, where the subject was discussed with Mr. Harvey J. Smith, Chief Investigator for the Auditor General. Mr. Smith expressed willingness on the part of the Auditor General's Department to investigate any concrete cases which were brought to their attention, but said that under existing conditions he doubted very much if this would accomplish the desired purpose.

After further conference with the President and Executive Secretary of the Society, it was decided to secure the introduction of a bill into the Legislature, which it was hoped would prove to be a satisfactory remedy. Bill No. 880, session of 1921, was introduced in the Senate by Mr. Joyce of Luzerne.

While this bill was still in committee, the Legislature abolished the Board of Public Charities, and created the Public Welfare Bureau. This, of course, rendered the act void and it died in committee, the abolishment of the Board of Public Charities having occurred so late in the session that there was no opportunity to make the act conform with the changed conditions.

The Committee, from its investigations, is convinced that abuses exist in many of the state and state aided hospitals in the Commonwealth. As the Legislature does not meet again for two years, we would suggest that the matter be taken up with Dr. J. M. Baldy, head of the Welfare Bureau, and with his coöperation it may be possible to correct the abuses without furthere remedial legislation.

Respectfully submitted,
H. B. Gibby, Chairman.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

Dr. George A. Knowles, Philadelphia, Chairman, presented the report of the Medical Legislative Conference, as follows:

To the Members of the House of Delegates of the Medical Society of the State of Pennsylvania:

As president of the Conference, I respectfully submit the following report:

The uppermost question during the past year has been Compulsory Health Insurance. The Commission on Health Insurance held a number of meetings at which various members of the conference were present and made telling arguments against the adoption, in this state, of Social Insurance. Mr. Lewis of the Commission informed me that the medical men had by their arguments convinced him that the medical aspect of this question was detrimental to the people affected by its workings. The Commission appointed to consider the subject reported to the Legislature. Two reports were made; one, the majority, was signed by nine members rejecting the proposition, and a minority report advocating its adoption was signed by two members. There was no bill passed by the Legislature continuing the Commission or appointing a new one, and consequently the question of Compulsory Health Insurance will be a dead issue for some time to come.

The anti-vivisectionists were not in evidence during the session of the Legislature nor were the anti-vaccinationists, consequently no legislation on these subjects had to be met.

The members of the osteopathic cult are no doubt satisfied with their status in the state, for they had no bills introduced in their behalf.

House Bill 23, known as the Chiropractic Bill, was the one which caused us so much work and anxiety. This bill in the form introduced in the House would have legalized all the unlicensed chiropractors in the commonwealth, and would have established a Board of Chiropractic Examiners. It had low educational qualifications, and would have opened Pennsylvania to the product of all the chiropractic schools in the country. Its main object was to legalize all those practicing this cult at the present time and who are doing so in defiance of the law. After a very strenuous time and much effort, this bill died a timely death in the Committee on Health and Sanitation of the Senate.

Bill 856, introduced by the Department of Education, had for its object the centralization of various examining boards under one Board of Licensure. The Conference decided to take no action on this bill.

There were a number of bills which were endorsed by the Conference and some others which were opposed by it.

The Conference was ready and willing to assist the Department of Health in all its efforts to have legislation passed for the health and welfare of the people.

The President of the Conference made numerous trips to Harrisburg, and on a number of these trips was accompanied by the Secretary.

There were several hearings given by the Committee on Health and Sanitation of the Senate and House and these were attended by members of the Conference, as well as members of the profession.

The legislative work was very arduous and required a great amount of time and effort. Tribute should be paid to the men who did yeoman work in bringing about such good results. Dr. Van Sickle stood always ready to respond when called upon, and Dr. E. A. Krusen was kept busy with his part of the program, and, needless to say, did it well. Every member of the Conference responded when called upon for help, and aided greatly in accomplishing the results. The profession in general showed its interest when the financial call was made, and when the necessity for interviewing the members of the Legislature arose, members of the Society throughout the state acted quickly and effectively.

The Conference published four bulletins during the session. These were sent to the secretaries of the county societies and kept the profession informed of the work. These bulletins were compiled by Dr. Van Sickle and Mr. Haight.

In the future the medical profession should take its rightful stand in politics and show the men who are charged with the conduct of political matters that it can and will care for its own interests, as well as safeguard the health of the people. It should take an active part in the selection of men for the Legislature, who can be depended upon to pass only such medical legislation as will be beneficial and constructive.

Mr. Robert Haight, who was selected as legislative adviser, did splendid work. He was ever ready with advice and suggestions, and the results accomplished are in no small way due to his untiring efforts.

Dr. Steedle and Dr. Miller, chairmen, respectively, of the House and Senate Committee on Health and Sanitation, deserve the gratitude of the medical profession of Pennsylvania for the very important rôle they played in the work at Harrisburg during the recent session of the Legislature, and the successful results obtained were due in great measure to the assistance these gentlemen rendered the conference.

Respectfully submitted,
G. A. KNOWLES, President.

The Secretary read the following communication from Dr. Seymour DeWitt Ludlum, Philadelphia, delegate to the International Congress of Eugenics:

> "I have just returned from the Second International Congress of Eugenics in New York, having attended as delegate of the State Society.
>
> "I was very much impressed by certain phases of the matters presented, and the exhibits, and the gathering together of men eminent as psychologists, biologists, sociologists, etc. I should like to write a report at length, and, if it meets with the approval of the House of Delegates, publish it in THE PENNSYLVANIA MEDICAL JOURNAL, or in any way you suggest. As I have just returned, such a report is not yet written. Please advise me."

It was moved and seconded that Dr. Ludlum be instructed to prepare a formal report for publication. Carried.

Under "Unfinished Business," the Secretary stated that there were one or two amendments to the by-laws, which were published in the August issue of THE PENNSYLVANIA MEDICAL JOURNAL, which required the action of the House.

Dr. Edward B. Heckel, Pittsburgh, said that unanimous consent was required to take up these amendments at this time, and he therefore objected to their consideration now.

The President stated, that, according to the by-laws, amendments offered in such a way as these could only be considered by unanimous consent, and as objection has been raised by Dr. Heckel, they could not be considered by the House at this time.

Dr. Heckel moved that when the House of Delegates adjourns this afternoon, it adjourn to meet at 8:30 p.m.

Seconded and carried.

Dr. Joseph G. Steedle, McKees Rocks, stated that the amendment to the by-laws relative to the duties of the Executive Secretary was very fundamental so far as the organization of the State Society was concerned, and to make it a legal transaction he moved that the chair appoint a committee of three to revise the constitution and by-laws in regard to this particular. Seconded.

Dr. George A. Knowles, Philadelphia, moved as an amendment that the committee consist of five, and that it be empowered to revise the constitution and by-laws as a whole.

The amendment was seconded, accepted, and the original motion as amended was put to a vote and carried.

The President stated that this committee would be appointed later.

Dr. George A. Knowles, Philadelphia, said he should like the House of Delegates to recommend organized effort on the part of the Society to combat vicious legislation, and therefore moved that the House of Delegates be asked to take an active part in legislative matters tending toward the protection of the public welfare.

Seconded and carried.

Dr. William H. Mayer, Pittsburgh, moved that a rising vote of thanks be extended to Dr. Knowles for the work he did in the Legislature last winter.

Seconded and unanimously carried.

Dr. Addinell Hewson, Philadelphia, said he desired to add his testimony to the efficient help rendered by Dr. Knowles and the members of his Committee in the passage of the amended Anatomical Act. The Medical Schools throughout the state pointed with great satisfaction to the passage of this bill.

The Chairman of the Committee on Credentials called the roll and announced that seventy-seven delegates had registered.

On motion, the House of Delegates adjourned until 8:30 p.m.

Henry D. Jump, President,
Walter F. Donaldson, Secretary.

October 3, 1921—Monday Evening—Second Meeting of the House of Delegates

The House of Delegates reconvened at 8:30 p.m., and was called to order by President Jump.

The Chairman of the Committee on Credentials presented a supplementary report and announced a quorum present.

The roll was called.

The minutes of the previous meeting were read, corrected, and approved.

Under the head of "New Business," Dr. Victor S. Messinger, Easton, in speaking for the Northampton County Medical Society, urged the delegates to give their support to men like Dr. Knowles, who were looking after the welfare of the people and the medical profession.

Dr. Messinger moved that Dr. William P. O. Thomason, Easton, be extended the privileges of the floor.

Seconded and carried.

Dr. Thomason stated that the Northampton County Medical Society has been taking special interest in the matter of cults and has sent a circular letter to each delegate prior to this meeting.

Dr. Francis J. Dever, Bethlehem, moved that a committee be appointed to select medical writers of the greatest ability in the state to write articles for publication in the various magazines as educational matter.

Seconded.

Dr. Arthur C. Morgan, Philadelphia, moved to amend that this matter be referred to the Committee on Public Health Legislation and that the committee be directed to secure medical writers to write on subjects of medical importance and to publish articles in the magazines or other papers they may select.

The amendment was seconded, accepted, and the original motion as amended was put to a vote and carried.

The President announced, as members of the Committee to Revise the Constitution and By-Laws, Drs. William H. Mayer, Allegheny County, Chairman; Joseph, D. Findley, Blair County; Jay B. F. Wyant, Armstrong County; John B. McMurray, Washington County; Robert E. Heath, Fayette County.

Dr. George G. Harman, Huntingdon, Chairman, presented a partial report for the Reference Committee on Reports of Officers and Standing Committees, as follows:

Your committee, though short-handed, has considered in detail the suggestions and recommendations contained in the communications from the various officers and standing committees, and desires to report as follows:

First, the address of Henry D. Jump, President. The address of President Jump was well received and demonstrated his ability and efficiency as an executive officer. His interest in the legislative transactions during the year is highly commendable, and it is not only in the legislative department that he has shown his strength, but also in his work in the component societies, giving his time in the encouragement of higher ideals and the advancement of medicine in general. The work he has accomplished will be of lasting benefit to every practitioner in the state.

Second, the report of the Secretary, Walter F. Donaldson. Secretary Donaldson's report shows an increase of only one hundred and eighty-eight members during the year, which is a reflection on the individual members of the county societies for their lack of interest in securing new members. The committee would recommend that better missionary work be done by each individual member.

The committee endorses the recommendation of Secretary Donaldson in reference to his opinion on medical defense insurance in maintaining "that it is not the function of our society to assume the responsibility or control of this phase (payment of judgments) of liability insurance. Our success in defending our well-selected cases to date would apparently indicate that necessary payments of judgments would be few and far between. In spite of this favorable experience, we believe, however, that such protection is best handled by experienced liability insurance companies."

The report on the Postgraduate Program at four different points in the state shows a good start along this line, and this program is worthy of encouragement and continuation.

On the whole, the Secretary's report indicates that he has been a careful and painstaking official, and your committee desires to commend his activities and bespeak for him the coöperation and unity of the secretary of every county society.

Third, the report of Frederick L. Van Sickle, Executive Secretary. The report of Executive Secretary Van Sickle is a very complete one. The committee desires to commend him for his zeal and interest concerning the management of the Society's affairs. We note in his report that notice has been served that the Department of Health will not be able to carry on an active campaign of prosecution of illegal practitioners without additional assistance from the State Society or the Medical Legislative Conference, due to the fact that appropriations made at the last session of the Legislature are not sufficient to cover the entire year in an aggressive manner. We approve his suggestions that the House of Delegates should take this into consideration and advise the Board of Trustees as to what their wishes will be for the next fiscal year.

On the report of the Editor your committee is favorable to the report as published, and urge that the members coöperate in the suggestions set forth in making the Journal profitable financially and otherwise, and commend him for the success and improvement in the Journal during the past year.

Fourth, the report of the Treasurer, John B. Lowman. The report shows the Society to be in good financial condition, and we note also that the expenses during the past year were about two and a half times greater than those of two years ago. If we want to keep up with the progress of the times, we will have to reach deeper into our pockets to maintain our established reputation as one of the best state societies in the United States.

The report shows the Treasurer to be a good accountant, and the committee commends him for his faithfulness.

Fifth, the report of the Special Committee appointed by the President for the Investigation of Hospital Abuses. We commend the action of the committee in attempting to correct abuses of hospitals treating patients gratis who are financially able to pay for surgical and medical treatment, and recommend the suggestion made by the committee relative to taking the matter up with Dr. J. M. Baldy, head of the Public Welfare Commission.

Sixth, the report of the Committee on Community Needs for Hospitals. This report contains interesting data on hospitals that would be of great value to State Society members if similar data were to be obtained of all hospitals throughout the state. We approve their suggestions that every effort should be made to induce hospitals not having up-to-date equipment to obtain the same as soon as possible. We also approve the suggestions that districts where the population is inadequately served by the present hospitals should have the need of well-equipped hospitals impressed upon them.

Seventh, the report of the Committee on Conservation of Vision. Your committee favors their resolutions relative to prohibition or restriction of wood alcohol, believing such action to be to the best interests of society, and worthy of consideration.

Their recommendation as to physical examination of automobile drivers is approved. Such physical examination would greatly reduce the number of accidents and deaths in the commonwealth, and for this reason the recommendation is worthy of serious consideration. Respectfully submitted,

G. G. Harman, Chairman,
Fred Fisher.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be received and the recommendations therein approved.

Seconded and carried.

Relative to the report of the Commission on Conservation of Vision which was read, Dr. Heckel moved that a copy of the report be sent to the Committee on Public Health Legislation, with a request that they give it their sincere consideration and see that proper legislation is enacted to cover the recommendations contained in the report.

Seconded and carried.

Dr. Heckel moved that the resolutions contained in the report be given by the Press Committee to the public press.

Seconded and carried.

The Secretary read the regulations of the Committee on Conservation of Vision with reference to automobile licenses.

Dr. Heckel moved that these resolutions be transmitted to the Committee on Public Health Legislation with the request that they see to it that proper legislation is enacted to conform to the regulations.

Seconded and carried.

Dr. Heckel moved that a copy of these regulations be turned over to the Press Committee for publication in the newspapers.

Seconded and carried.

Dr. John A. Hawkins, Pittsburgh, moved that a copy of these regulations be sent to the Pennsylvania Motor Federation with the request that that organization assist in the enactment of such legislation as will tend toward this end.

Seconded and carried.

Dr. Heckel moved that the Committee on Community Needs for Hospitals be continued.

Seconded and carried.

It was moved and seconded that the Committee on the Defense of Medical Research be continued. Carried.

Dr. Heckel moved that the Commission on Conservation of Vision be continued.

Seconded and carried.

On motion of Dr. Heckel, the House of Delegates adjourned to meet at 9 a.m., Wednesday, October 5th.

Henry D. Jump, President,
Walter F. Donaldson, Secretary.

October 5, 1921—Third Meeting of the House of Delegates

The House of Delegates met at 9:30 a.m., and was called to order by the President, Dr. Frank G. Hartman, Lancaster.

The Chairman of the Committee on Credentials made a supplementary report, announced a quorum present, and the President declared the House was ready to proceed with the transaction of business.

The minutes of the preceding meeting were read and approved.

Dr. Edward B. Heckel, Pittsburg, rose to a question of privilege to present to the members of the House of Delegates a man to whom the medical profession and public owed a debt of gratitude for the work he did during the last session of the Pennsylvania Legislature, Senator Summerfield Miller, a member of the Clearfield County Medical Society. Dr. Miller thanked the members of the House of Delegates for their expressed appreciation of the work he did at Harrisburg.

The election of officers being the first order of business, the President declared the House ready to receive nominations for President-Elect.

Dr. Edward B. Heckel, Pittsburgh, nominated Dr. Lawrence Litchfield, of Allegheny County, for President-Elect.

The nomination was seconded by delegates from Bradford, Dauphin, Erie, Chester and Huntingdon Counties.

It was moved that nominations be closed.

Seconded and carried.

Dr. Wilson, Beaver County, moved that the Secretary be instructed to cast the ballot for Dr. Litchfield as President-Elect.

Seconded and carried.

The Secretary cast the ballot, and Dr. Litchfield was declared duly elected.

The following officers were nominated and declared duly elected:

First Vice-President, John B. Carnett, Philadelphia; Second Vice-President, Victor P. Chaapel, Williamsport; Third Vice-President, John B. McMurray, Washington; Fourth Vice-President, Spencer M. Free, Dubois; Secretary, Walter F. Donaldson, Pittsburgh; Assistant Secretary, Christian B. Longenecker, Philadelphia; Treasurer, John B. Lowman, Johnstown.

Councilor and Trustee of the Seventh District, Harry W. Mitchell, Warren; Councilor and Trustee of the Third District, Ira G. Shoemaker, Reading.

Delegates to the American Medical Association: Edward B. Heckel, Pittsburgh; W. S. Stewart, Coraopolis; William F. Bacon, York; Wilmer Krusen, Philadelphia; Charles C. Cracraft, Claysville.

Alternates Designate, William H. Mayer, Pittsburgh; Thomas Curry, Philadelphia; J. Wesley Ellenberger, Harrisburg; Robert K. Rewalt, Williamsport; Francis J. Deaver, Bethlehem; Harry W. Albertson, Scranton.

The election of officers having been completed, the President appointed Drs. Heckel and Krusen to find the President-Elect and escort him to the House of Delegates.

The selection of the next place of meeting being in order, invitations were extended to hold the 1922 meeting at Scranton, Harrisburg and Pittsburgh.

Dr. George A. Knowles, Philadelphia, moved that Scranton be chosen as the next place of meeting, which motion was seconded and unanimously carried.

The President stated that the next meeting of the Society would begin on the first Monday in October, 1922.

President Hartman introduced President-Elect Litchfield.

Dr. Litchfield, accepting the office, said:

"*Mr. President and Members of the House of Delegates:*

"I can not well express the pleasure that I feel in this expression of confidence on your part and in the flattering tribute that you have given me. I can only say that after my year as novitiate under your able President, I will try to follow in his illustrious footsteps. I thank you very much."

Dr. George G. Harman, Huntingdon, Chairman, made a supplementary report for the Reference Committee on Reports of Officers and Standing Committees, as follows:

First. On the report of the Chairman of the Board of Trustees your committee notes with satisfaction and pride the efficient management of the Society's affairs by the Board of Trustees and approves of their action in providing funds for the Medical Legislative Conference in assessing a minimum fee of one dollar on each member of the State Society, and we regret to note that there are a few societies in the state that have not met their quota. We hope such societies will recognize the importance and remit in due time their dollar per capita to help along with the good work the Legislative Conference is accomplishing.

Second. The committee further recognizes the efforts of the Board of Trustees in urging increased membership, loyalty, attendance upon scientific meetings, interest in health legislation and in medical economics.

Third. The individual reports of councilors meet with approval and deserve much praise for brevity, and the councilors for loyal service in their several districts. We regret to note that little interest is being taken in censorial meetings, and would recommend that this meeting be given special attention.

Fourth. The report of the Committee on Health and Public Instruction is approved.

Fifth. The report of the Commission on Cancer is approved with the recommendation that their good work be continued.

Sixth. The report of the Committee on Society Comity and Policy is very brief and suggests nothing of special import.

Seventh. The report of the Committee on Efficient Laws on Insanity meets with favor by your committee.

Eighth. The report of the Committee on Medical Benevolence is very short but commendable.

Ninth. The report of the Committee on Archives is worthy of consideration and we would recommend that as far as possible a complete set of The Pennsylvania Medical Journals be kept in an accessible place by each county society for reference and that the generous offer of Dr. C. L. Stevens, of Athens, be accepted in supplying any needed copies.

Tenth. On the report of Dr. G. A. Knowles, President of the Legislative Conference. Your committee recognizes the valuable work accomplished by the Conference, and recommends that it be continued and that every support be given them in the furtherance of their work. A rising vote of thanks has already been tendered Dr. Knowles, and his confreres for their untiring zeal. Too much praise cannot be given in favor of the splendid work accomplished by this committee.

Eleventh. Your committee further approves the suggestion made by the Legislative Conference that in the future the medical profession should take its rightful stand in politics and show the men who are charged with the conduct of political affairs that it can and will care for its own interests as well as safeguard the health of the people, and further that we take an active part in the selection of men for the Legislature, who can be depended upon to pass only such medical legislation as will be beneficial and constructive.

REPORT ON THE ADDRESS OF PRESIDENT HARTMAN.

Twelfth. The committee congratulates the President-Elect on his most excellent and well prepared address and concludes that if this is a measure of his timidity and trepidation, we are well assured that the high standard of activity established by his predecessors in that office will be fully maintained, and a step forward made in the progress of one of the greatest professions on earth. We bespeak for him hearty coöperation and help from every medical man and woman in the state, so that when he emerges from his office one year hence, he may fully realize that his fondest hopes and ambitions in the interest of the profession have been realized. The address was a splendid outline of the legislative activities of the past year and evidenced mature thought and careful preparation.

Thirteenth. Your committee agrees with the President when he says the medical fraternity has demonstrated its interest in the health of the public, not only by administering to the afflicted and in preventive medicine, but equally so in its effort to effect legislation that would protect the community against those who, without the proper education and training, might attempt to practice the healing art.

Fourteenth. The suggestion that this Society should give its fullest measure of support to the undertakings of the Welfare Commission enacted by the last Legislature, is approved, for as he says, antagonism can only result in conflict, but coöperation will react to the benefit of administrators and those administered to, as by that means and that alone can the wisdom of the act be determined.

Fifteenth. While the President's whole address was full of advanced thought, and many other high spots worthy of consideration in this report, we are of the opinion that his closing remarks were the strongest and were well worth emphasizing: "For all time the medical profession has been held responsible for the health of our fellow men, and the present is no exception," and then the question, "How then can we best fulfill our mission and accomplish the greatest good for the welfare of the people of this State?" answered by saying, "Only one way, by organization. Organization of the entire medical fraternity of the state, irrespective of the lines of distinction formed as a result of methods taught in the colleges attended, binding those together with one thought, that of the welfare of the afflicted and then with a common purpose in life and practice, supporting the medical and charitable agencies throughout the state, we can make ourselves felt and recognized in our efforts to be constantly and unselfishly doing for others without the expectation of fee or reward." This noble and feelingly expressed thought is approved, and your committee recommend that some action be taken relative to the carrying out of the President's wishes, and that every member of the State Society do his uttermost in making this the best year in the history of the Medical Society of the State of Pennsylvania.

Respectfully submitted,
G. G. Harman, Chairman,
Fred Fisher,
Franklin B. Witmer, Committee.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be received and adopted.

Seconded.

After considerable discussion the motion to adopt was put to a vote and carried.

Under "New Business," the Secretary read the following resolution, which was offered by Dr. George A. Knowles:

"*Resolved*, That the House of Delegates express its gratitude for the efficient work of Dr. Summerfield Miller, Clearfield County, and Dr. Joseph G. Steedle, Allegheny County, in the Session of the Legislature of 1921.

"Their efforts were untiring in the interest of the public health and of the medical profession and many of the results in the enactment of medical legislation were due to their efforts."

Dr. Heckel moved that the resolution be adopted by a rising vote, and that a copy of the same be sent to Dr. Steedle and Dr. Miller.

Seconded and unanimously carried.

On motion of Dr. Heckel, the House of Delegates then adjourned to meet Thursday, October 6, at 1 p. m.

Frank G. Hartman, President,
Walter F. Donaldson, Secretary.

OCTOBER 6, 1921—FOURTH MEETING OF THE HOUSE OF DELEGATES

The House of Delegates met at 1 p. m., and was called to order by President Hartman.

Dr. Wilmer Krusen, Philadelphia, moved that roll call be dispensed with.

Seconded and carried.

The minutes of the preceding meeting being the next order of business, it was moved and seconded that the reading of them be dispensed with. Carried.

The Secretary presented the following resolution from the Reference Committee on Scientific Business:

Resolved, That the Medical Society of the State of Pennsylvania, through designated officers or committee, initiate negotiations with the Graduate School of Medicine of the University of Pennsylvania for the preparation of a program of state-wide university extension postgraduate work in the winter of 1922-1923.

Dr. James J. Brennan,
Dr. D. A. Webb,
Dr. W. L. Estes.

Dr. William H. Mayer, Pittsburgh, moved that the resolution be approved and adopted and referred to the Committee on Scientific Work.

Seconded and carried.

Dr. Robert A. Keilty, Danville, stated that the Reference Committee on Scientific Business had received a lengthy communication from Dr. Arthur McDonald and Dr. Tom A. Williams, Washington, D. C., concerning the consolidation of Government Science under the Smithsonian Institute.

Dr. George A. Knowles, Philadelphia, moved that the communication be received and filed.

Seconded and carried.

Dr. Harry W. Albertson, Scranton, as Chairman of the Finance Committee of the Board of Trustees, recommended that the following allotment be made for the ensuing year: 75c for the Medical Defence Fund, 15c for the Medical Benevolence Fund, and the remainder of the $5.00 for the general fund, for publication of the Journal and such other work as the Trustees might find necessary.

Dr. Heckel moved that the recommendation of the Board of Trustees be received and approved.

Seconded and carried.

The Secretary read the following names presented by component county medical societies to the House of Delegates for its consideration as District Censors, and moved that they be declared elected:

Seconded and carried.

Adams County, T. C. Miller, Abbottstown; Allegheny County, Joseph E. Willetts, Pittsburgh; Armstrong County, Thomas N. McKee, Kittanning; Beaver County, W. H. Herriott, Freedom; Bedford County, Walter F. Enfield, Bedford; Berks County, C. W. Bachman, Reading; Blair County, Joseph D. Findley, Altoona; Bradford County, Charles M. Woodburn, Sayre; Bucks County, Alfred E. Fretz, Sellersville; Butler County, J. M. Dunkle, Butler; Cambria County, H. F. Tomb, Johnstown; Carbon County, C. J. Balliet, Lehighton; Center County, J. L. Seibert, Bellefonte; Chester County, Charles E. Woodward, West Chester; Clarion County, B. P. Walker, West Monterey; Clearfield County, ——— ————, Philipsburg; Clinton County, Charles L. Fullmer, Renovo; Columbia County, Luther B. Kline, Catawissa; Crawford County, W. E. Hyskell, Meadville; Cumberland County, H. A. Spangler, Carlisle; Dauphin County, Hiram McGowan, Harrisburg; Delaware County, J. Harvey Fronfield, Media; Elk County, R. P. Heilman, Emporium; Erie County, O. N. Chaffee, Erie; Fayette County, J. S. Hackney, Uniontown; Franklin County, Leslie M. Kauffman, Chambersburg; Greene County, F. S. Ullom, Waynesburg; Huntingdon County, William H. Sears, Huntingdon; Indiana County, W. B. Ansley, Saltsburg; Jefferson County, Spencer M. Free, Dubois; Juniata County, W. H. Haines, Thompsontown; Lackawanna County, Frederick J. Bishop, Scranton; Lancaster County, Walter J. Leaman, Lancaster; Lawrence County, C. M. Iseman, Ellwood City; Lebanon County, W. M. Guilford, Lebanon; Lehigh County, G. F. Seiberling, Allentown; Luzerne County, Samuel M. Wolfe, Wilkes-Barre; Lycoming County, Edward Lyon, Williamsport; McKean County, B. H. Hall, Bradford; Mercer County, George W. Kennedy, Sharon; Mifflin County, F. A. Rupp, Lewistown; Monroe County, A. W. Wertman, Tannersville; Montgomery County, William McKenzie, Conshohocken; Montour County, Reid Nebinger, Danville; Northampton County, Edgar M. Green, Easton; Northumberland County, Sunbury; Perry County, Lenus A. Carl, Newport; Philadelphia County, E. E. Montgomery, Philadelphia; Potter County, Nathan W. Church, Ulysses; Schuylkill County, J. A. Lessig, Schuylkill Haven; Snyder County, G. E. Hassinger, Middleburg; Somerset County, Charles P. Large, Meyersdale; Sullivan County, Theodore Wright, Dushore; Susquehanna County, William J. Condon, Susquehanna; Tioga County, J. C. Secor, Westfield; Union County, Harry R. Thornton, Lewisburg; Venango County, George B. Jobson, Franklin; Warren County, O. S. Brown, Warren; Washington County, Joseph W. Hunter, Charleroi; Wayne County, Arthur J. Simons, Newfoundland; Westmoreland County, B. R. Smith, Jeannette; Wyoming County, W. B. Beaumont, Laceyville; York County, William F. Bacon, York.

Dr. John W. Worrell, Pittsburgh, moved that the delegates of the Society to the American Medical Association be instructed to favor a bill that will permit a practitioner of one state to practice in any other state of the Union. Seconded.

After discussion, Dr. Fred Fisher, Erie, moved as an amendment that it be the sense of the House of Delegates that we favor any additional reciprocity legislation.

The amendment was seconded, accepted and the original motion as amended was voted on and carried.

The Secretary stated that the Board of Trustees recommended and requested that the House of Delegates pass a resolution recognizing and commending the work of the Committee on Public Health Legislation in connection with the Medical Legislative Conference and recognize officially as a function of that committee its participation in the Medical Legislative Conference.

Dr. Wilmer Krusen, Philadelphia, moved that the recommendation of the Board of Trustees be adopted.

Seconded and carried.

Dr. Heckel moved that the thanks and appreciation of the House of Delegates be extended to the retiring officers for the efficient manner in which they had conducted the business of the Society during the past year, and further that sincere thanks and appreciation be extended to the Chairman of the local Committee on Arrangements and to all of his coworkers for the efficient and generous manner in which they had entertained the members and guests of the Society during this session.

Seconded and unanimously carried.

As there was no further business to come before the meeting, President Hartman thereupon declared the House of Delegates adjourned.

Frank G. Hartman, President,
Walter F. Donaldson, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES ANSWERING ROLL CALL

Adams County Society—Edgar A. Miller.

Allegheny County Society—Carey J. Vaux, President; John W. Worrell, Edward B. Heckel, Alvin E. Bulger, George W. McNeil, William H. Mayer, I. Hope Alexander, Henry P. Ashe, John A. Hawkins, Richard J. Behan, Joseph G. Steedle, John G. Burke, John M. Thorne.

Armstrong County Society—Harry A. Holland, Sagamore.

Beaver County Society—Jefferson H. Wilson.

Berks County Society—Abner H. Bauscher, President; H. Philemon Brunner, Frank P. Lytle.

Blair County Society—Albert S. Oburn, President; Joseph D. Findley.

Bradford County Society—Cyrus Lee Stevens, Athens.

Bucks County Society—Anthony F. Myers, Secretary; J. Fred Wagner.

Butler County Society—Alfred H. Ziegler.

Cambria County Society—Frank U. Ferguson, Gallitzin; William E. Grove.

Carbon County Society—Jacob A. Trexler, Secretary.

Center County Society—David Dale, Secretary.

Chester County Society—Laban T. Bremerman.

Clearfield County Society—John C. Sullivan.

Clinton County Society—David W. Thomas.

Columbia County Society—Donald B. McHenry.

Crawford County Society—Oliver H. Jackson.

Cumberland County Society—Harry A. Spangler.

Dauphin County Society—Clarence R. Phillips, President; Earle R. Whipple, J. Wesley Ellenberger.

Delaware County Society—George H. Cross, President; C. Irvin Stiteler.

Erie County Society—John A. Darrow, President; Fred Fisher.

Franklin County Society—Frank N. Emmert.

Huntingdon County Society—Harry C. Wilson, President; George G. Harmon, Huntingdon.

Indiana County Society—William E. Dodson, Indiana.

Jefferson County Society—Samuel M. Davenport, President; Francis D. Pringle.

Lackawanna County Society—Daniel E. Berney, President; John W. Grant, Leo P. Gibbons, Martin O'Malley.

Lancaster County Society—Horace C. Kinzer, Secretary; J. Paul Roebuck, Samuel W. Miller.

Lawrence County Society—William A. Womer, Secretary.

Lebanon County Society—Franklin B. Witmer, President; J. DeWitt Kerr.

Lehigh County Society—Frederick R. Bausch.

Luzerne County Society—Lewis Edwards, President; Walter S. Stewart, Harry LeRoy Whitney, Samuel M. Wolfe.

Lycoming County Society—Robert K. Rewalt, President; Walter S. Brenholtz.

Mercer County Society—M. Edith MacBride.

Monroe County Society—William R. Levering, Secretary.

Montgomery County Society—Edgar S. Buyers, Secretary; J. Newton Hunsberger, Herbert A. Bostock.

Montour County Society—Robert A. Keilty, President; Horace V. Pike.

Northampton County Society—Milton W. Phillips, President; Francis J. Dever, Victor S. Messinger.

Northumberland County Society—Horatio W. Gass.

Philadelphia County Society—George Morris Piersol, President; John Welsh Croskey, Thomas R. Currie, J. Allen Jackson, George A. Knowles, Wilmer Krusen, Arthur C. Morgan, William S. Newcomet, Paul J. Pontius, William S. Wray, J. Norman Henry, William N. Bradley, George C. Yeager, William C. Ely, Charles A. E. Codman, Henry Page, William B. Scull, Moses Behrend, Addinell Hewson, Edward J. Moore, Frances C. Van Gasken, J. Torrance Rugh.

Schuylkill County Society—G. R. S. Corson, David Taggart.

Snyder County Society—G. Edgar Hassinger.

Somerset County Society—Bruce Lichty.

Sullivan County Society—Martin E. Herrman.

Tioga County Society—Farnham H. Shaw.

Venango County Society—John F. Davis.

Warren County Society—Michael V. Ball.

Washington County Society—Charles L. Harsha, President; John B. McMurray.

Westmoreland County Society—Charles D. Ambrose.

York County Society—Horace M. Alleman, James C. May.

GENERAL MEETING, TUESDAY, OCTOBER 4, 1921

The Seventy-First Annual Session of the Medical Society of the State of Pennsylvania was called to order in general meeting at 10 a. m., Tuesday, October 4, 1921, in the ballroom of the Bellevue-Stratford Hotel, Philadelphia, by the president, Dr. Henry D. Jump, of Philadelphia.

President Jump invited the ex-presidents and vice-presidents to the platform.

Prayer by His Eminence, D. Cardinal Dougherty, Archbishop of Philadelphia.

Almighty God, Giver of health, we own that sickness is frequently the vengeance of nature and morality upon breakers of their laws and that, as Holy Writ says: "The bones of the transgressor shall be filled with the vices of his youth and they shall sleep with him in the dust." But in Thy mercy Thou drawest good out of evil by converting the sick chamber into a school of self-searching, and by deputing illness as Thy messenger to arouse in the unbeliever and the libertine a sense of their destiny and duty, to break the bonds which enthrall them in pride and passion, and to rescue their souls from corruption, and their lives from passing to the sword.

For the renewal of our health, Thou hast given us sleep, the balm of hurt minds, as also pure air, the sun's light and warmth, the properties of herbs, and the manifold force of nature. Above all, Thou hast put it into the hearts of physicians to study the human body, the diseases which assail it, the cures that heal it. Thou art the Divine Physician, and earthly physicians are Thy coworkers to allay pain, to make saving confections, to prepare ointments of health and to stay the hand of death.

Since the wise healer of bodies, skilled in his art, is more than an army to the public weal, and is worthy of honor and praise as a well-doer of mankind, guide, we beseech Thee, the deliberations of this gathering, shed light on their minds, give them a right sense of their duty. Inspire them with a horror of dangerous experiments and forbidden treatments; instill into their minds the virtue of charity toward the sick poor; grant that their counsels may bring alleviation to the suffering, hope to the afflicted, joy to the sorrowing, and length of days to the stricken. Amen.

Adress of Welcome

Hon. J. Hampton Moore, Mayor, Philadelphia: Mr. President: We have given you one of the most delightful October mornings for the opening of your Convention in Philadelphia, and we are very glad to find that you are on time.

We are not unconscious, those of us in Philadelphia, of the importance of a gathering of this kind, and of the influence those who come to Philadelphia to attend such a convention have in their own communities throughout the state. I am as pleased always to talk to Pennsylvanians as I would be to those coming from other states of the Union, because in Pennsylvania we have about all that is good and about all that is important to the general welfare that can be found anywhere in any other state. As a matter of fact, out of Pennsylvania have gone most of those good men and those good women who have contributed to the making and to the upkeep of this great nation—now grown to be one hundred and ten millions strong. If we may boast of Pennsylvania in this regard, seeing that, as we go into other states and other communities and into other countries, Pennsylvanians are always held in high esteem; how much more may we boast, and properly so, as Philadelphians, of those things that have grown out of Philadelphia, because there in this city at one time was about everything that was in Pennsylvania and at another time about everything that was in the United States.

This was the first American city. The great beginnings of our nation were here. Everything that contributed in a fundamental way to the improving of the nation originated in Philadelphia. It was a great shipping center, a great center of commerce and finance, because here the original ships came, long before New York was a port. We financed all the great wars in Philadelphia. Surely we financed the Revolution, through Robert Morris; and the war of 1812 largely through Stephen Girard, great mariner and merchant and philanthropist; and the Civil War largely through the agency of Jay Cook. So in these matters Philadelphia stands very high in the country's record of achievement.

But Philadelphia to the medical man should be a Mecca both historic and traditional, because all the great beginnings of the medical profession in the United States were in Philadelphia.

Most big things in this country in their origin have been traced back to Benjamin Franklin, the great American and the world philosopher, of whose memory we are so proud, and I think I am not awry in stating it was due to the influence of this many-minded man that the first hospital was established in this city away back yonder along about 1755, and that thereafter came one institution after another toward which the mind of the medical historian must turn to-day in order to establish correctly his facts with regard to things that have since happened in the development of the great profession which you so honorably represent.

The first College of Physicians was founded here. The first institutes which brought men and women together in the medical profession were here. Many of the discoveries so important now in your scientific researches were made here. Not only were these foundations here but we are making a particular effort in Philadelphia through the institutions from which many of you graduated and went forth to other communities to add to the splendid reputation that Philadelphia did enjoy and that it believes it still enjoys the world over in the medical fraternity.

To-day we have new problems coming that, so far as the physician is concerned, excite his interest and attract his attention and require his careful study. We find them in all public institutions here—cancer, tuberculosis, drug habitues, alcoholism. May we not call the attention of patriotic as well as scientific and earnest representatives of the medical profession to the stealthy and increasing use of drugs and alcohol in one form or another? There were those throughout the nation who believed that this form of beverage could be absolutely prohibited, and they have had their way so far as the attainment of legislation is concerned. But there is a suspicion—and no one has a better opportunity to harbor that suspicion than the officers of the law in a great municipality like this—that alcoholism has not been suppressed, that the use of it has not been prohibited, that the manufacture of it still goes on, and that there are many who, while ordinarily they would violate the law, now seem to have—it is a matter of extreme regret for a public official to say it—a supreme contempt for the law. There are ways in which the disreputable physician—and, of course, there are none of them in this convention—can give encouragement to the man who has contempt for the law in this respect. I know I am speaking to those who would have the same contempt for the disreputable physician that I as the Mayor of this municipality, in attempting to enforce the law, would have; and I say the physician who knows himself and who knows the law and who abides by the law in the exercise of these rights and privileges which have been conferred upon him has a responsibility, and a very special responsibility, in the matter of these prohibitory laws, and he should exercise his rights with the wisest care and greatest caution, so that this stultification of the individual, this increase of the addict habit, this growth of crime may never be laid at the door of the physician.

Perhaps this is not what you would call, in the ordinary sense, an address of welcome, but having been a member of Congress for many years, and a member of the subcommittee that granted the Harrison Anti-narcotic Bill, having listened to many addresses, from many parts of the country, with respect to some of the phases of this question, having been thrown into this great charge of attempting to govern two millions of people in the city of Philadelphia, with their varied interests and their isms and their private views upon public questions, I have come to feel that wherever it can be said with decency it *should* be said by those who have influence in the community, that the best that is in us should be exercised to promote good citizenship and to prevent that which tends to degrade, even though it may degrade through the body rather than through the mind. You are, after all, the custodians of the masses of the people. You are their guides, advisers, friends. So much depends upon you as involuntary officers of the law and as good citizens, hoping for peace, good order and good will in your own communities, that I venture to make these few observations that may not be necessarily appropriate to an adddress of welcome.

If you care to do so, visit our institutions while you are in Philadelphia. Go up yonder to Byberry, where we care for the insane. Go up yonder where we take care of those who are picked up upon the streets or who are addicted to certain habits to which I have referred and are subject to incarceration for a period. See for yourselves, though it may not be new to you, what the great charge is that is laid upon the municipal officials in a city of this magnitude.

Our public schools to-day are not under control of the Mayor of this city. There are those who are defective and are going to be helpless through the whole of their lives, going to be a public charge upon somebody. I don't know what the cause is. In our schools defectives are being watched, and sometimes being turned down. Where do they go? This state has not provided where they shall go.

There is a sort of coöperation now between Pennsylvania and Philadelphia with respect to epileptics, but it is not effective. Epileptics have been dumped—literally dumped—from our health institutions, upon the doorstep of our Department of Welfare. We have adjusted that question recently by saying they must be cared for by one or the other of these institutions, and if the state fails in its duty the city will care for them because they are helpless and some hopeless. This is one of the things where the physician is only scratching the surface as yet. We haven't the remedy, but they must be cared for, for they are helpless, and unless they can be privately maintained, at a considerable expense, they are a charge, and Pennsylvania has not done its full duty in this regard. If you, who have so much to do with state legislation, who are so interested in the laws, and who succeed because of the technical knowledge and the scientific ability you possess—because of your great usefulness to the masses of the people—if you can succeed in having some appropriation made for the care of epileptics and the feeble-minded, they may be helped, and we may know whether they are medical charges or just charges against the community, and it will be a most beneficial thing for you to do.

Ladies and Gentlemen, you are very welcome in the City of Philadelphia, and I trust this will not be the last convention you will hold here. You have met where the surroundings are historic, where everything pertaining to medicine and surgery makes us feel proud of our city. We have some diseases here that have not yet been quite eliminated. They may be, some day, when the public conscience is properly aroused. We have a form of disease here that is not altogether new, but has given us some trouble recently—the disease of "contractoritis"—which we are attempting to abolish, and have to a certain extent. If we could only apply a little surgery to it it would be a rattling good thing, but there are those who get their "dope" in one way or another and contribute to the perpetuation of this dread municipal disease. You come to a city that has been just a little sick politically but which is sound physically; and I have heard it said that that physician is most successful—and this may be applied to the head of a municipality as well as to a physician—where all the people in the community are well; that that physician is happier, more prosperous, makes more money, and for this reason: when all the people in the community are well they are all able to pay; when all are sick they are mighty poor.

No body of Pennsylvanians has come to us more welcome than this, many of whom, having gone forth from our midst, have attained such honor and distinction in their own communities; and we welcome with the most hearty good will all of you to Philadelphia for as long a stay as you may care to make, for we understand your influence in the community and the great value, public and private, of the services you daily perform.

Address of Welcome

Dr. George Morris Piersol, President of the Philadelphia County Medical Society:

Mr. President, Fellow Members of the Medical Society of the State of Pennsylvania: After the cordial welcome that has been accorded you by his Honor, the Mayor of Philadelphia, further words of greeting may seem superfluous. Our Mayor has addressed you as the representative of the entire population of this great city, whereas I wish to speak to you briefly on behalf of your professional colleagues, the members of the Philadelphia County Medical Society.

There are events in the annals of every organization that stand out preëminently, and to which each member looks forward with a keen anticipation. Such is the feeling that we of the Philadelphia County Medical Society have toward these all too rare occasions when it becomes our privilege to assume the rôle of hosts and welcome the Medical Society of the State of Pennsylvania to our city.

As we assemble here this morning it must be apparent to each of you the striking contrast that exists between the situation as it is to-day compared with that which obtained three years ago. In 1918, when we last had the opportunity of entertaining you, the gates of the Temple of Janus stood wide open, and our people were intent upon the supreme efforts that were soon to terminate victoriously the titanic struggle that had disrupted an entire world. True to their traditions, the medical men of the State of Pennsylvania had long since heard and answered the call to arms, and at that meeting of this Society many there were who were absent, laboring patriotically behind the far flung battle fronts of Europe.

To-day all this is changed. The dogs of war are once more in leash. A weary world emerging from the chaos of conflict has slowly been adjusting itself to altered conditions. Many a familiar figure, prominent in the work of this Society, is once more in our midst, and under the happier auspices of the present we are eager to demonstrate to you that the physicians of Philadelphia are addressing themselves to the more constructive problems of peace with the same courage and zeal that they displayed in meeting the sterner duties of war.

To those of us who live and labor in Philadelphia, the coming of so many of our associates and colleagues from different parts of our great state is ever an inspiration and a stimulus. We welcome the opportunity that these gatherings afford to profit by your constructive criticism and helpful suggestions.

We hope that this advantage is reciprocal, and that you too are glad to be here with us. For is not Philadelphia, with her enviable medical history, unique as a centre for such a meeting as this? You need not be reminded of the illustrious clinicians and scientists who, laboring within the walls of our historic schools and hospitals, have added to the glory not only of Philadelphia, but also of American medicine. It is unnecessary to recall the achievements of John Morgan and Rush, Gross and Agnew, Leidy and Pepper, and of a score of others whose names are inseparably associated with the medical progress of our nation. It was such men as these that gave to our city the medical traditions which inspire us with pardonable pride, and which we believe serve also as an inspiration to you when you come among us on these occasions.

We trust, however, that we have more to offer you than merely the background created by the accomplishments of our celebrated predecessors. It is our hope that here to-day you will find us living up to the traditions of the past, true to our heritage and alive to the responsibility of our trust; furthermore, that you will discover that the earnest, well directed efforts and scientific endeavors of the physicians of this city have succeeded in retaining for Philadelphia the medical preëminence that has always been her proud boast.

The doors of our institutions, our laboratories, and our homes are open to you. We rejoice that you are with us and are both proud and happy again to have the opportunity to serve you in whatever way you may elect. We know that, as has ever been the case, our intimate association with you at this meeting will further strengthen these bonds which already so firmly unite us with the rest of the medical profession of Pennsylvania. In the name of the Philadelphia County Medical Society, it is my privilege to greet you and my pleasure to bid you welcome.

Presentation of Program

Dr. Thomas G. Simonton, Pittsburgh, Chairman of the Committee on Scientific Work:

On behalf of the Scientific Program Committee I present for your consideration the program as outlined in the official bulletin. The Committee this year, after due consideration, and consultation with a great many members of the Society, listed the subjects to be discussed at the State Society meeting here in Philadelphia. This program is the embodiment of the wishes of those with whom they consulted. I should like to say that we expect quite a number of very distinguished foreigners here from considerable distances to help with the program, together with a number of the members of the State Society who are giving the time and the work to make this program a success. We should like to ask the members of the Pennsylvania Medical Society to be faithful in their attendance on the sessions. Is it fair to ask men to come here twenty-five hundred miles or more, to present papers to this Society—men of eminence in the community in which they live—and then have a mere handful to attend the meeting? We hope you will help in this way to have a large attendance at all the section meetings.

Now, if you will all turn to page 38 you will note that the session of the Medical Section is scheduled for the afternoon at 2 o'clock. That is a typographical error and should be changed to read 9 a. m. on Thursday instead of 2 p. m. Please change that in your program.

Presentation of Gavel to Retiring President Jump by Dr. Frank C. Hammond, Philadelphia

Dr. Hammond: It was my privilege to present to you, Dr. Jump, as Retiring President of the Philadelphia County Medical Society, a gavel. It is my privilege and pleasure to-day to present you, as the Retiring President of the Medical Society of the State of Pennsylvania, with a gavel, a token from the Board of Trustees on behalf of the Medical Society of the State of Pennsylvania. I understand that your luck runs in threes. Of gavels you now have two. For a third, see what the American Medical Association will do.

The Board of Trustees has greatly appreciated your counsel in its deliberations, and the State Medical Society is greatly appreciative of your loyalty and devotion as a worker in its vineyard.

President Jump: Dr. Hammond, I thank you sincerely for the presentation. I appreciate the sentiment which has moved the presentation. Whatever measure of success may have attended my efforts as the President of this Society has been due to the loyal coöperation of you men in the Society and to the aid and comfort and patience of the officers, particularly of the Trustees. Again I thank you.

I trust that the accumulation of gavels may not lead me to become a knocker.

Announcement of Entertainments

Dr. John Berton Carnett, Philadelphia: Mr. President and Members of the State Society: The Entertainment Committee has endeavored and, I think, has succeeded in arranging a series of very attractive entertainments for the visiting members and their accompanying ladies. The members of the Philadelphia County Society, acting as your hosts, cordially invite every one of you to be present at the entertainments which are listed on the last two pages of this white booklet which was handed to each member at the time he registered.

The entertainment of the members themselves necessarily is limited to the evening, because each day is fully occupied by the scientific program. For this evening a combined smoker and vaudeville performance has been arranged for 8:30 in this room. Registered members will be welcomed on exhibition of their official registration button. Immediately following the vaudeville a supper will be served in this room. Every registered member is welcome but it will be necessary to present the special supper ticket, one of which has been handed to each of you—a ticket of this sort (indicating), properly endorsed by the one using it. For the unregistered members who arrive late arrangements have been made to keep the Bureau of Registration open until eleven o'clock or later so that it will be possible for them easily to secure their buttons and tickets.

To-morrow, Wednesday, evening all members and all ladies, whether they are from out of town or from Philadelphia, are cordially invited to attend the President's reception in this room at 8:30 p.m. The reception will be followed by a ball, at which every one is invited to be present. No tickets are required. Dr. Van Sickle, on behalf of the State Society, has provided a snappy orchestra and plenty of Volstead punch. The Reception Committee will be on hand to pick out strangers in our midst and see that they secure introductions to their fellow guests. There will be plenty of dancing partners for all, and everyone is urged to be present.

The Committee has adhered to custom in reserving Thursday evening for a popular lecture on a medical subject. By reference to your little white book you will find a symposium on the subject of the care of the disabled service man. The principal speaker will be Dr. Haven Emerson of New York City, and the subject will be open to discussion by every one. That meeting will be held in this room at 8:15 p.m., on Thursday evening, and is open to all members and their ladies and to the general public, both ladies and gentlemen.

For Friday and Saturday numerous clinics covering all the specialties of medicine and surgery have been arranged at all the leading hospitals in the city for the benefit of those members who stay beyond the expiration of the scientific part of this meeting.

The general program is contained in this same white booklet. Specific details as to what will be done at each hour listed therein will be posted on the Bulletin Board of this hotel each morning.

Arrangements have been made whereby members of the County Medical Society will carry on their windshields placards bearing the words "State Medical Society." We desire that members of the Society seeing these placards will immediately hail the driver of the automobile, so that they may be taken to their destination.

The ladies also will find much of interest to them in this program. The H. K. Mulford Company has invited all the ladies, both from Philadelphia and from out of town, to visit their Glenolden Biological Farm this afternoon. This is the largest of its kind in the world. No special ticket is required, the ladies are simply asked to go to Broad Street Station in time. They will be met on the train floor by ladies who are members of the Committee on Arrangements, and there will be special cars to take them to Glenolden. The details of the program there can be obtained from the booklet. A very entertaining program has been arranged and will be carried out rain or shine.

At the request of some of the ladies, the returning time has been changed from what appears in the booklet so that the train will get back from Glenolden at 5:43, arriving at Broad Street Station at 5:43. This change gives the out-of-town ladies a little better opportunity to avail themselves of the invitation extended by the Stanley Company of America to attend a moving picture performance called "Cappy Ricks," at the Stanley Theatre at Nineteenth and Market Streets, at 7:15 p.m. This theatre I think is one of the finest in the country and in itself is well worth visiting. On this occasion the ladies will require a special ticket, which may be obtained by application at the Ladies' Rest Room, on the Broad and Walnut Streets corner of this building, this floor. It is necessary that application be made before four o'clock this afternoon. It is permitted that the doctors make reservations for their wives.

To-morrow, Wednesday, at 12 o'clock, out-of-town ladies have been invited to the League Island Navy Yard. Fuller details of that trip are contained in the booklet. A very attractive program has been arranged there for them. No special tickets are required. They are requested to meet in the ladies' room on the main floor near the Walnut Street entrance and in the ladies' room on this floor at the Broad and Walnut Streets corner. There they will be met by the various members of the Committee and conducted to waiting automobiles which will carry them to League Island. It may be interesting to the ladies to know that the invitation comes direct from the Surgeon-General of the Army. For luncheon the ladies will be served with exactly the same menu as that served to the sick sailors. Reference to the white booklet shows how attractive that menu is.

Wednesday evening the ladies, both from Philadelphia and from out of town, are invited to the President's reception, which we have already discussed.

On Thursday afternoon—by consulting your white booklet—you will find the details of a lecture to be given on "Historical Philadelphia," by Dr. Macfarlane of the Jefferson Hospital, at 2:30, following which sight-seeing cars will carry the ladies around to some of these historic points, and deliver them finally at the Bellevue at 5:30.

The New Century Club for Women, at 124 South Twelfth Street, has been very gracious and extends all the privileges of the club to out-of-town visiting ladies, who will be given permission to avail themselves of these privileges on exhibition of their official guest button.

The Ladies' Rest Room and Bureau of Information will be open daily, on the Broad and Walnut Streets corner of this building, on this floor, where members of the Committee will be continuously in attendance to assist out-of-town ladies in any way possible.

In conclusion I should like to urge upon every one, both members and out-of-town ladies, the necessity of displaying their official button or badge at all times, and of being prompt on all occasions. The Committee on Arrangements trusts that you will put your stamp of approval upon their plans by turning out a full attendance at each of these entertainments.

Delegates From Sister Societies

President Jump invited to the platform and introduced to the assemblage, extending the privileges of the floor, the following accredited delegates from other societies: Dr. Robert Lee Rowley, Hartford, from the Connecticut State Medical Society; Dr. Clarence Bartlett, Philadelphia, President of the Homeopathic Medical Society of Pennsylvania; Dr. E. A. Krusen, Norristown, from the Medical Legislative Conference of Pennsylvania.

Installation of President Hartman

Retiring President Jump: The term of my office now expires. It becomes my very great pleasure to induct into the President's chair my successor. He is well known to all of you. In the midst of a very busy life, in which he has gained a prominence in his profession and a regard in the locality in which he lives that few of us obtain, he has found time to give to organized medicine, that the craft may be improved, that the welfare of the public may be ministered to. He has been a worker in the ranks. He has been a committeeman of value. He has been a councilor of wisdom. Last year you elected him unanimously to be your President. I have the honor of introducing Frank G. Hartman, of Lancaster.

Dr. Frank G. Hartman, Lancaster: Mr. President, I want to thank you for the very complimentary manner in which you have inducted me into office, and also I want to take advantage of this opportunity to express to you and to the members of the State Society my appreciation of the many courtesies that you have extended to me during your year of office. I am sure that those courtesies have better prepared me for the work which I believe is now before me. I thank you.

(Dr. Hartman then proceeded to read his Presidential Address. See page 1, October, 1921, Journal.)

MINUTES OF THE SECTION ON MEDICINE

Tuesday, October 4, 1921.

The meeting was called to order at 2 P. M. by the Chairman of the Section, Dr. Howard J. Schleiter, of Pittsburgh.

Dr. Schleiter then read "The Chairman's Address," which was not discussed.

Dr. Adam J. Simpson, Chester, read a paper entitled, "The Diagnosis of Portal Cirrhosis," which was discussed by Drs. F. J. Kalteyer, Philadelphia; Frank Alleman, Lancaster; J. Quincy Thomas, Conshohocken, and A. J. Simpson, Chester, in closing.

Dr. Harry H. Penrod, Johnstown, read a paper entitled, "Acute Articular Rheumatism," which was discussed by Drs. George E. Holtzapple, York; John A. Lichty, Pittsburgh; Lawrence Litchfield, Pittsburgh; Irwin J. Moyer, Pittsburgh; Albert S. Kaufman, New Kensington; Ralph Pemberton, Philadelphia; J. Newton Hunsberger, Norristown; William N. Johnson, Philadelphia; James I. Johnston, Pittsburgh; Frank R. Clark, Berwick, and Harry H. Penrod, Johnstown, in closing.

Dr. Max H. Weinberg, Pittsburgh, read a paper entitled, "The Mental Side of Hyperthyroidism," which was discussed by Drs. Charles W. Burr, Philadelphia; B. W. Winkelman, Philadelphia; Alfred Gordon, Philadelphia; Albert E. Roussel, Philadelphia; J. Allen Jackson, Danville; S. Solis Cohen, Philadelphia, and Max H. Weinberg, Pittsburgh, in closing.

Dr. Joseph Sailer, Philadelphia, read a paper entitled, "Achylia Gastrica," which was discussed by Drs. J. Quincy Thomas, Conshohocken; John A. Lichty, Pittsburgh; and Thomas G. Simonton, Pittsburgh.

Dr. Charles C. Wolferth, of Philadelphia, read a paper entitled, "Disturbances of the Circulatory Mechanism in Cardiac Disease," which was discussed by Drs. Lawrence Litchfield, Pittsburgh, and Charles C. Wolferth, Philadelphia, in closing.

Dr. James H. Whitcraft, of Wilkinsburg, read a paper entitled, "Cytology of the Cerebrospinal Fluid," which was discussed by Drs. Max H. Weinberg, Pittsburgh; John A. Lichty, Pittsburgh; Henry K. Mohler, Philadelphia, and James H. Whitcraft, Wilkinsburg, in closing.

Dr. Henry K. Mohler, of Philadelphia, read a paper entitled, "Tuberculosis of the Peritoneum;" and

Dr. Albert J. Bruecken, of Pittsburgh, read one entitled, "Evidence of General Infection in Tuberculosis."

These two papers were discussed together by Drs. Alexander Armstrong, of White Haven; Samuel R. Haythorn, of Pittsburgh; Elmer H. Funk, Philadelphia; John A. Lichty, Pittsburgh; and Henry K. Mohler, Philadelphia, and Albert J. Bruecken, Pittsburgh, in closing.

Adjourned at 5:45 P. M.

Wednesday, October 5, 1921.

The meeting was called to order by the Chairman at 2 P. M.

The Chairman of the Executive Committee, Dr. George E. Holtzapple, of York, read the report of the Executive Committee, in which Dr. Edward J. G. Beardsley, of Philadelphia, was nominated as Chairman for the ensuing year, and Dr. Adam J. Simpson, of Chester, as Secretary. These gentlemen were unanimously elected as the officers of the Section for the coming year.

Dr. David L. Farley, Philadelphia, read a paper by Dr. George W. Norris, of Philadelphia, and himself, entitled, "Acute Tuberculosis; An Analysis of One Hundred Cases from the Pennsylvania and the University Hospitals," which was discussed by Drs. Paul Lewis, Philadelphia; Francis J. Dever, Bethlehem; A. Alexander MacLachlan, Pittsburgh; Clarence K. Phillips, Harrisburg; Elmer H. Funk, Philadelphia; Paul Lewis, Philadelphia, and David L. Farley, Philadelphia, in closing.

Dr. Andrew P. D'zmura, Pittsburgh, read a paper entitled, "Mechanical Aspects of Chronic Valvular Heart Disease," which was discussed by Drs. George W. Norris, Philadelphia; Lawrence Litchfield, Pittsburgh; Adam J. Simpson, Chester; James D. Heard, Pittsburgh; Arthur C. Morgan, Philadelphia; Austin O'Malley, Philadelphia; Samuel R. Haythorn, Pittsburgh, and Andrew P. D'zmura, Pittsburgh, in closing.

Dr. Carl E. Ervin, Danville, read a paper entitled, "Goitre—From the Standpoint of the Clinician," which was discussed by Drs. M. Howard Fussell, Philadelphia; John A. Lichty, Pittsburgh; Albert E. Roussel, Philadelphia; Robert A. Keilty, Danville, and Carl E. Ervin, Danville, in closing.

Dr. J. J. R. MacLeod, of Toronto, Canada, delivered an extemporaneous address entitled, "The Chemical Control of Respiration," which was not discussed. Dr. MacLeod received a unanimous vote of thanks.

Dr. DeWayne G. Richey, Pittsburgh, read a paper entitled, "The Bacteriology of Human Cystic Bile," which was discussed by Drs. Stanley Reiman, Philadelphia, and DeWayne G. Richey, Pittsburgh, in closing.

Dr. Elmer H. Funk, Philadelphia, read a paper entitled, "The Importance of Examing the Diaphragm," which was discussed by Drs. James I. Johnston, Pittsburgh; Alexander Sterling, Philadelphia, and Elmer H. Funk, Philadelphia, in closing.

Dr. Joseph McIver, Philadelphia, read a paper by Dr. George Wilson, of Philadelphia, and himself, entitled, "Spinal Cord Changes in the Anemias," which was discussed by Drs. George J. Wright, Pittsburgh; Max H. Weinberg, Pittsburgh; Irwin J. Moyer, Pittsburgh, and Tom Williams, Washington, D. C.

Adjourned at 5:50 P. M.

Thursday, October 6, 1921.

The meeting was called to order by the Chairman at 9 A. M.

Dr. Ralph Pemberton, Philadelphia, read a paper entitled, "A Consideration of Certain Basic Factors in Disease," which was discussed by Drs. Irwin J. Moyer, Pittsburgh; Francis J. Dever, Bethlehem, and Ralph Pemberton, in closing.

Dr. Edward Weiss, Philadelphia, read a paper entitled, "The Urea Concentration Test for Kidney Function," which was discussed by Drs. Roy Ross Snowden, Pittsburgh; Ralph Pemberton, Philadelphia, and Edward Weiss, Philadelphia, in closing.

Dr. John H. Musser, Jr., read a paper by himself and Dr. Thomas MacMillan, Philadelphia, entitled, "The Subjective Symptoms of the Cardiac Arrhythmias," which was discussed by Drs. James D. Heard, Pittsburgh, and John H. Musser, Jr., Philadelphia, in closing.

Dr. George Morris Piersol, Philadelphia, read a paper entitled, "Unresolved Pneumonia;" and

Dr. David Riesman, Philadelphia, read one entitled, "Further Reports on a Form of Chronic Unilateral Broncho-Pneumonia, of Non-Tuberculous Origin."

The discussion on Dr. Piersol's paper was opened by Dr. Charles H. Miner, Wilkes-Barre; and that on Dr. Riesman's, by Dr. Henry R. M. Landis, Philadelphia. Discussion on the two papers was continued by Drs. Thomas G. Simonton, Pittsburgh, and L. Napoleon Boston, Philadelphia, the two authors, Drs. Piersol and Riesman, closing the discussion.

Dr. Lawrence Litchfield, Pittsburgh, read a paper entitled, "The Importance of Weight Control in the Maintenance of Health and the Management of Disease," which was discussed by Drs. Alfred Stengel, Philadelphia; Theodore Diller, Pittsburgh; Elliott P. Joslin, Boston; Judson Daland, Philadelphia, and Hobart A. Hare, Philadelphia.

Dr. Frederick T. Billings, Pittsburgh, read a paper entitled, "Primary Thrombosis of the Pulmonary Artery," which, in the absence of Dr. George W. Norris, who was to have opened the discussion on this paper, was not discussed.

Dr. John A. Lichty, Pittsburgh, read in part a paper by himself and Dr. William A. Bradshaw, Pittsburgh, entitled, "The Clinical Interpretation of the Phthalein Test and Ambard Coefficient in Certain Disturbances of Kidney Function," which was discussed by Dr. O. H. Perry Pepper, Philadelphia, and Dr. Lichty, in closing.

Dr. L. F. Barker, of Baltimore, delivered an address on the subject of "The Classical Endocrine Syndromes," which was not discussed. Dr. Barker received a rising vote of thanks.

Adjourned at 1 P. M.

MEMBERS REGISTERED IN SECTION ON MEDICINE

Adams County Society—E. A. Miller, East Berlin; J. L. Sheetz, New Oxford.

Allegheny County Society—W. J. McGeary, Allison Park; E. M. Iland, H. B. Speer, Coraopolis; A. S. Kaufman, New Kensington; I. H. Alexander, H. P. Ashe, F. T. Billings, A. J. Bruecken, A. E. Bulger, J. G. Burke, Theodore Diller, A. P. D'zmura, C. W. W. Elkin, S. A. Godlewski, M. A. Gould, W. H. Guy, S. R. Haythorn, T. L. Hazlett, J. D. Heard, J. I. Johnston, J. A. Lichty, Lawrence Litchfield, G. W. McNeil, W. W. G. Maclachan, E. E. Mayer, W. H. Mayer, I. J. Moyer, DeW. G. Richey, E. P. Schatzman, H. G. Schleiter, T. G. Simonton, R. R. Snowdon, J. M. Thorne, C. J. Vaux, M. H. Weinberg, J. W. Worrell, G. J. Wright, Pittsburgh; A. M. Pierce, West Elizabeth; H. O. Pollock, Wilmerding; J. H. Whitcraft, Wilkinsburg.

Armstrong County Society—H. A. Holland, Philadelphia.

Bedford County Society—W. F. Enfield, Bedford.

Berks County Society—F. P. Lytle, Birdsboro; J. S. Borneman, Boyertown, G. F. Potteiger, Hamburg; R. M. Alexander, H. M. Allen, C. W. Bachman, A. H. Bauscher, J. N. Becker, W. S. Bertolet, H. P. Brunner, Israel Cleaver, L. C. Darrah, W. E. Fisher, I. H. Hartman, W. F. Krick, J. E. Livingood, Daniel Longaker, C. G. Loose, C. S. Reber, I. G. Shoemaker, Reading; L. H. Fitzgerald, Temple; S. S. Hill, G. G. Wenrich, Wernersville; J. H. Horne, L. J. Livingood, Womelsdorf; D. G. Moyer, J. H. Orff, Wyomissing.

Blair County Society—S. M. Davies, R. T. Eldon, A. S. Oburn, Altoona; J. G. Watson, Juniata; D. F. Glasgow, Tyrone.

Bradford County Society—C. L. Stevens, Athens; C. N. Haines, Sayre; P. N. Barker, Troy.

Bucks County Society—A. F. Myers, Blooming Glen; James Collins, Frank Lehman, Howard Pursell, J. F. Wagner, H. D. Webb, Bristol; W. S. Erdman, Buckingham; E. L. Smith, Hatton; H. L. Thomas, Langhorne; C. B. Smith, Newton; W. F. Weisel, Quakertown; E. E. Pownall, Richboro; A. E. Fretz, C. D. Fretz, Sellersville; F. G. Cope, Upper Black Eddy.

Butler County Society—J. C. Atwell, A. H. Ziegler, Butler.

Cambria County Society—H. T. Prideaux, Cresson; B. A. Braude, H. H. Penrod, Johnstown.

Carbon County Society—J. A. Trexler, Lehighton; W. P. Long, Weatherly.

Center County Society—C. S. Musser, Aaronsburg; David Dale, J. L. Seibert, Bellefonte; G. S. Frank, Millheim; P. H. Dale, State College.

Chester County Society—G. T. Magraw, Avondale; T. G. Aiken, Berwyn; W. W. Betts, Chadds Ford; F. H. Wells, Chester Springs; S. H. Scott, Coatesville; H. F. Heagey, Cochranville; L. T. Bremerman, Downingtown; D. E. Hutchison, E. Downingtown; J. S. Hammers, Embreeville; J. H. Johnson, Glen Moore; C. S. Kurtz, Malvern; J. C. Scott, Oakbourne; R. C. Hughes, Paoli; J. R. Maxwell, Parkesburg; W. N. Smith, Phoenixville; J. T. Taylor, Pomeroy; C. J. Brower, Spring City; W. T. Sharpless, C. E. Woodward, West Chester.

Clarion County Society—J. E. Stute, Parkers Landing.

Clearfield County Society—L. E. Rowles, Clearfield; H. A. Blair, Curwensville; R. L. Williams, Houtzdale; G. B. Kirk, Kylertown; S. J. Miller, Madera; W. G. Falconer, Olanta; W. S. Bryan, Ramey; G. B. Shivery, Woodland.

Clinton County Society—J. M. Corson, Hughesville; J. B. Critchfield, W. J. Shoemaker, Lock Haven.

Columbia County Society—F. R. Clark, Berwick; D. B. McHenry, Orangeville.

Crawford County Society—O. H. Jackson, Meadville.

Dauphin County Society—P. A. Deckard, J. W. Ellenberger, D. S. Funk, D. J. Hetrick, J. B. Hileman, J. W. MacMullen, J. B. McAlister, G. R. Moffitt, C. R. Phillips, F. F. D. Reckord, L. W. Wright, Harrisburg; H. C. Myers, J. R. Plank, Steelton.

Delaware County Society—E. W. Bing, E. E. Brown, M. A. Neufield, G. B. Sickel, A. J. Simpson, A. L. Ussit, J. W. Wood, Chester; H. E. Orndoff, Glen Riddle; Leon Gottschalk, Marcus Hook; M. P. Dickeson, A. E. Easley, J. H. Fronfield, J. C. Starbuck, Media; J. H. Sherman, Philadelphia; R. T. Devereux, J. B. Roxby, Swarthmore; W. A. Blair, Upland.

Erie County Society—W. W. Richardson, Erie.

Fayette County Society—R. E. Heath, Fairchance; J. D. Sturgeon, Uniontown.

Franklin County Society—L. M. Kaufman, Chambersburg; H. C. McClain, Hustontown; T. D. White, Orrstown.

Greene County Society—W. J. Rouse, Ambler.

Huntingdon County Society—G. G. Harmon, Huntingdon; H. C. Wilson, Warriors Mark.

Indiana County Society—H. B. Smith, Blairsville; W. E. Dodson, Indiana; W. H. Nix, Unionville.

Jefferson County Society—S. M. Davenport, DuBois.

Juniata County Society—J. S. Brown, Okeson.

Lackawanna County Society—J. W. Grant, Diekson City; J. J. Brennan, J. D. Lewis, M. T. O'Malley, M. M. Rosenberg, Seranton.

Lancaster County Society—T. S. Irwin, Christiana; Vere Treichler, Elizabethtown; J. F. Mentzer, Ephrata; J. E. Hostetter, Gap; W. G. Hess, Holtwood; Frank Alleman, W. K. Baer, H. G. Barsumian, W. D. Blankenship, D. E. Cary, F. G. Hartman, H. C. Kinzer, Harry Pomerantz, J. M. Shartle, R. D. Swab, Lancaster; W. J. Leaman, Leaman Place; E. R. Brieker, M. H. Yoder, Lititz; J. D. Hershey, Manheim; J. P. Zeigler, Mount Joy; L. M. Bryson, Paradise; W. J. Steward, Pennhurst; C. E. Helm, Quarryville; M. M. Denlinger, Rohrerstown.

Lawrence County Society—W. A. Womer, New Castle.

Lebanon County Society—E. H. Gingrieh, F. B. Witmer, Lebanon.

Lehigh County Society—J. T. Butz, C. O. Henry, D. H. Parmet, H. T. M. Ritter, W. C. Troxell, Allentown; J. F. McAvoy, W. A. Reigel, Catasauqua; C. H. Muschlitz, Slatington.

Luzerne County Society—H. A. Brown, Lehman; J. B. Mahon, Pittston; H. M. Neale, Upper Lehigh.

Lycoming County Society—Edward Everett, Masten; W. E. Turner, Montgomery; F. R. Adams, F. S. Derr, Watsontown; W. S. Brenholtz, G. R. Driek, W. H. Fullmer, W. E. Glosser, C. E. Shaw, Williamsport.

Mercer County Society—F. C. Potter, Mercer.

Mifflin County Society—B. R. Kohler, Reedsville.

Monroe County Society—J. A. Singer, E. Stroudsburg; C. S. Logan, Stroudsburg.

Montgomery County Society—P. J. Lukens, Ambler; C. H. Arnold, C. A. Rose, W. J. Stein, Ardmore; H. W. Hassell, Bridgeport; W. Z. Anders, Collegeville; William McKenzie, J. Q. Thomas, Conshohocken; C. W. Leuders, Cynwyd; E. T. Quinn, Jenkintown; E. S. Buyers, J. L. Eisenberg, Remo Fabbri, A. R. Garner, B. F. Hubley, J. N. Hunsberger, Reinoehl Knipe, J. A. McCracken, Perry W. MeLaughlin, S. M. Miller, David Nathan, H. C. Podall, J. C. Simpson, W. S. Watson, J. G. Wilson, Norristown; F. B. Allen, North Wales; W. H. Hunsberger, Pennsburg; J. B. Sherbon, W. D. Vedder, Pottstown; R. C. Moore, Sehwenkville; W. J. Wright, Skippaek; N. H. Rahn, Souderton; H. F. Smyth, Wayne.

Montour County Society—C. E. Ervin, R. A. Keilty, H. V. Pike, Danville; H. B. Meredith, Philadelphia.

Northampton County Society—F. J. Dever, Bethlehem; M. W. Phillips, Chapman Quarries; J. E. Fretz, E. M. Green, A. L. Kotz, F. A. Sherrer, W. P. O. Thomason, W. G. Tillman, Easton; H. D. Heller, W. H. Rentzheimer, Hellertown.

Northumberland County Society—E. R. Samuel, Mt. Carmel; S. M. Holt, O. E. Salter, H. T. Simmonds, Shamokin; H. W. Gass, Sunbury.

Perry County Society—A. D. Van Dyke, New York, N. Y.

Philadelphia County Medical Society—M. H. Bynon, Darling; E. S. Abbot, C. T. Adams, H. B. Allyn, Andrew Anders, J. A. Anderson, C. R. Ankeney, J. H. Arnett, J. O. Arnold, F. K. Baker, O. A. Barrett, H. J. Bartle, S. E. Bateman, W. D. Baun, A. R. Baxter, H. B. Baxter, W. D. Bayley, E. J. G. Beardsley, E. H. Bedrossian, F. D. Benediet, D. H. Bergey, H. A. Bernard, Albert Bernheim, Mitehell Bernsheim, George Bevier, H. H. Birney, A. E. Blaekburn, Nathan Blumberg, M. H. Boehroch, A. J. Bogart, R. S. Boles, E. D. Bond, L. N. Boston, F. S. Bowman, H. P. Boyer, M. A. Bowyer, T. B. Bradley, W. R. Bready, J. H. Brewster, Ward Brinton, S. S. Brumbaugh, A. C. Buekley, C. W. Bun, J. M. Cahan, A. A. Cairns, G. A. Cameron, I. J. Carp, S. A. Carpenter, William Carroll, J. B. Carson, E. A. Case, A. E. S. Casey, J. B. Chaiken, J. C. Chestnut, C. A. E. Codman, M. Solis-Cohen, S. Solis-Cohen, D. T. Cooke, J. M. Corniee, J. H. Cunningham, J. F. Cunningham, D. D. Custer, C. T. Cutting, Judson Daland, A. H. Davisson, C. A. Van Dervoort, E. J. Dewees, J. C. Doane, J. F. Donnelly, E. M. Dorsett, R. S. Dorsett, E. L. Drake, J. H. Dripps, Winslow Drummond, J. H. Dubbs, Louis Edeiken, Frederiek Eft, Seneca Egbert, John Eiman, T. C. Ely, Abraham Epstein, A. A. Eshner, William Evans, C. E. Ewing, S. C. Falls, W. W. Farr, F. A. Faught, G. M. Ferguson, F. S. Ferris, Moses DeFord, Herbert Fox, H. D. Fraser, H. H. Freund, O. A. Fries, E. H. Funk, C. L. Furbush, M. H. Fussell, J. L. Galbraith, H. K. Gaskell, I. E. Gaston, S. P. Gerhard, S. F. Gilpin, Morris Ginsburg, R. M. Goepp, Maurice Goldberg, H. L. Goldberg, W. H. Good, Alfred Gordon, Charles Goss, F. V. Gowen, H. L. Gowens, Jr., Samuel Gross, D. C. Guthrie, F. J. Haerer, W. T. Hamilton, W. H. Hanke, W. H. Hannum, C. H. Harbaugh, H. A. Hare, Rose Harrison, L. B. Heiner, H. F. Heinkel, J. C. Heisler, J. N. Henry, M. X. Herrman, William Hewson, C. J. Hoban, I. W. Hollingshead, D. M. Hoyt, W. E. Hughes, R. E. Hutterloek, H. B. Ingle, S. C. Ingraham, W. I. Irwin, J. A. Jackson (Danville), L. M. Jaeobs, H. L. Jameson, G. E. Johnson, W. N. Johnson, W. T. Johnson, W. A. Jolley, J. B. Jones, H. D. Jump, F. J. Kalteyer, M. J. Karpeles, G. P. Katzenstein, Isadore Kaufman, E. E. Keiser, H. C. F. Kellner, E. W. Kelsey, R. A. Kern, S. P. Kerns, B. L. Keyes, Adam Klemm, Thomas Klein, P. P. Klopp, G. A. Knowles, H. B. Kobler, J. A. Kolmer, F. J. Kownaeki, W. R. Krauss, D. N. Kremer, E. B. Krumbhaar, S. W. Latta, E. H. Leaman, C. H. Lefcoe, C. F. M. Leidy, Joseph Leidy, M. V. Leof, Samuel Leopold, E. A. Leonard, Jr., G. F. LeVan, D. W. Levy, J. H. Lloyd, Edward Lodholz, S. A. Loewenberg, J. J. Lynch, B. B. V. Lyon, N. M. MaeNeill, E. W. McCloskey, J. F. MeCloskey, Thomas McCrae, N. S. McDowell, William Me Keage, J. M. MeKee, A. F. MeKinley, J. D. McLean, F. Q. McQuaide, B. H. Mann, C. L. F. Manning, Clara Marshall, A. J. Mathews, William Mathews, M. K. Meyers, E. W. Miehener, H. MeC. Miller, M. V. Miller, C. K. Mills, J. V. Missett, H. K. Mohler, W. F. Monaghan, E. J. Moore, W. B. Morford, A. C. Morgan, E. J. Morris, H. G. Munson, J. A. Murphy, J. H. Musser, Jr., W. T. M. Nelson, W. S. Newcomet, R. D. Newton, J. O. O'Connell, Herbert Old, A. E. Oliensis, A. M. Ornsteen, M. E. Osmond, A. J. Ostheimer, Lambert Ott, H. F. Page, C. A. Patten, R. V. Patterson, T. N. Pease, Alberta Peltz, Ralph Pemberton, O. H. P. Pepper, O. H. Petty, G. E. Pfahler, G. M. Piersol, C. S. Potts, Julius Propper, John Purdy, A. R. Rainear, M. H. Rea, Albert Real, O. K. Reed, E. Paul Reiff, David Reiter, J. H. W. Rheim, Gladys Riehey, David Riesman, W. J. Ritter, J. W. Roberts, W. E. Robertson, W. D. Robinson, W. F. Roper, P. S. Rosenblum, D. H. Rosenfeld, D. A. Roth, A. E. Roussel, Philip Rovno, A. I. Rubenstone, S. C. Runkle, Joseph Sailer, A. K. Sallom, G. J. Saxon, J. E. Scheehle, B. A. Schisler, T. G. Schnabel, H. H. Sehoenfeld, B. F. Seholl, I. R. Sehoonmaker, W. B. Seull, C. A. Serviee, J. A. Sharkey, W. K. Shea, P. A. Sheaff, H. B. Shmookler, C. E. Smith, H. A. Smith, J. H. Smith, J. M. Smith,, R. L. Smith, R. P. Smith, S. C. Smith, M. E. Smoezynski, R. D. Snively, Elizabeth Snyder, R. L. Sommers, W. L. C. Spaeth, R. H. Spangler, W. G. Speller, E. M. Spoont, B. F. Stahl, C. G. Steinmetz, Alfred Stengel, Alexander Sterling, F. E. Stewart, F. A. Stiles, A. C. Stroup, S. S. Stryker, W. A. Swalen, Eugene Swayne, (Harriman, Pa.), J. E. Talley, A. F. Targetts, M. R. Taylor, N. H. Taylor, M. C. Thursh, R. G. Torrey, Fred Traganza, P. A. Trall, H. M. D. Trexler, G. W. Truitt, G. B. Tullidge, J. T. Ullom, J. F. Ulman, T. S. Vaea, F. C. VanGasken, A. R. Vaughn, J. T. Walker, C. H. Wallace, Joseph Walsh, A. D. Waltz, E. T. Ward, Miriam Warner, A. P. Weaver, H. F. Weber, Max Ween, H. S. Weigle, Maurice Weisblum, P. F. Wells, E. B. Wenner, B. F. Wentz, Mary Wenzel, J. W. West, W. B. Whetstone, C. Y. White, R. P. Wilkinson, George Wilson, N. W. Winkelman, Samuel Wolf, C. C. Wolferth, H. C. Wood, Jr., Frank Woodbury, C. G. Yaeger, J. C. Yaskin, N. S. Yawger, G. C. Yeager,

G. G. Yost, G. J. Youell, Jonas Zettlemoyer, W. M. L. Ziegler, Philadelphia.

Schulykill County Society—David Taggart, Frackville; H. C. Bowman, Gilbertson, A. F. Bronson, Gordon; A. B. Fleming, Tamaqua.

Snyder County Society—G. E. Hassinger, Middleburg; E. W. Tool, Selinsgrove.

Somerset County Society—W. R. McClellan, Garrett; Bruce Lichty, Meyersdale; G. C. Berkheimer, Windber.

Tioga County Society—D. T. Ditchburn, Philadelphia; F. H. Shaw, Wellsboro.

Union County Society—O. W. H. Glover, Laurelton; Ralph Steans, Lewisburg.

Venango County Society—J. F. Davis, Oil City.

Warren County Society—G. T. Pryor, Sheffield; H. W. Mitchell, Warren.

Washington County Society—A. N. Booth, Bentleyville; G. L. McKee, Burgettstown; W. D. Martin, Dunn's Station; L. W. Braden, Ten Mile.

Westmoreland County Society—J. L. Sowash, Irwin; C. D. Ambrose, Ligonier.

Wyoming County Society—W. B. Beaumont, Laceyville.

York County Society—M. L. Bailey, Dillsburg; Curtis J. Hamme, Dover; H. M. Alleman, Hanover; B. E. Gamble, Manchester; G. E. Holtzapple, J. C. May, R. C. Rasin, Charles Rea, Philip Spaeder, York.

MINUTES OF THE SECTION ON SURGERY

Tuesday, October 4, 1921

The chairman, Dr. Elwood R. Kirby, Philadelphia, called the meeting to order at 2 p.m., in the Bellevue-Stratford Hotel, and delivered the Chairman's Address.

Dr. Harvey C. Masland, Philadelphia, read a paper entitled "Some Thoughts on Fractured Long Bones, Their Displacement and Treatment." Discussed by Drs. Damon B. Pfeiffer, Philadelphia; Levi J. Hammond, Philadelphia; Dr. Masland in closing.

Drs. George M. Dorrance and Eugene C. Murphy, Philadelphia, presented a paper entitled "Abduction Treatment in Fracture of the Neck of the Femur," which was read by Dr. Murphy. This paper was discussed jointly with one by Dr. M. S. Henderson, Rochester, Minn., entitled "Non-Union in Fractures of the Neck of the Femur," by Drs. Levi J. Hammond, Philadelphia; C. E. Thomson, Scranton; Jonathan C. Biddle, Ashland; John L. Atlee, Lancaster; George M. Dorrance and M. S. Henderson.

Dr. T. Turner Thomas, Philadelphia, read a paper entitled "Fracture of the Shaft of the Femur," which was discussed by Drs. William L. Estes, So. Bethlehem; George P. Muller, Philadelphia; John B. Lowman, Johnstown; M. Behrend, Philadelphia; C. E. Thomson, Scranton; Herbert B. Gibby, Wilkes-Barre; M. S. Henderson, Rochester, Minn.; Jonathan C. Biddle, Ashland; Dr. Thomas in closing.

Dr. J. Torrance Rugh, Philadelphia, read a paper entitled "Diseased Conditions of Bones and Joints as Influenced by Menstruation." Discussed by Dr. Edward A. Schumann, Philadelphia.

Dr. Walter E. Lundblad, Sayre, read a paper entitled "Transfusion," which was discussed by Drs. Jonathan M. Wainwright, Scranton; George M. Dorrance, Philadelphia; Samuel Rubin, Philadelphia.

Adjourned 5:30 p.m.

Wednesday, October 5, 1921

The chairman, Dr. Elwood R. Kirby, called the meeting to order at 2 p.m, and read the report of the Executive Committee, which resulted in the election of Dr. A. C. Wood, Philadelphia, chairman, and Dr. George M. Dorrance, Philadelphia, secretary of the Section for the coming year.

Dr. Hubley R. Owen, Philadelphia, read a paper entitled "Recurrence in Hernia." Discussed by Drs. George G. Ross, Philadelphia; William J. Taylor, Philadelphia; Penn-Gaskell Skillern, Jr.; Dr. Owen in closing.

Dr. John J. Gilbride, Philadelphia, read a paper entitled "Gastrojejunal Ulcer."

Dr. Harry M. Armitage, Chester, read a paper entitled "Instruction for Prevention of Recurrence Following Gastro-Enterostomy." These two papers were discussed jointly by Drs. Donald Guthrie, Sayre; B. B. Vincent Lyon, Philadelphia; J. Q. Thomas, Norristown; J. J. Gilbride; Harry M. Armitage in closing.

Dr. Stephen E. Tracy, Philadelphia, read a paper entitled "Treatment of Fibromyomata Uteri." Discussed by Drs. John A. McGlinn, Philadelphia; Frank B. Block, Philadelphia; Dr. Tracy in closing.

Dr. B. B. Vincent Lyon, Philadelphia, read a paper entitled "A Consideration of Nonsurgical Biliary Tract Drainage as an Aid to the Surgeon." Discussed by Drs. Francis J. Dever, Bethlehem; J. J. Gilbride, Philadelphia; J. Q. Thomas, Norristown; M. Behrend, Philadelphia; Dr. Lyon in closing.

Drs. H. A. McKnight and Herman Trager, Philadelphia, presented a paper entitled "Tuberculin Therapy in Surgical Tuberculosis," which was read by Dr. McKnight. Discussed by Drs. John H. Jopson, Philadelphia; Myer Solis-Cohen, Philadelphia; B. A. Thomas, Philadelphia; Dr. McKnight in closing.

Adjourned 6:00 p.m.

Thursday, October 6, 1921

The chairman, Dr. Kirby, called the meeting to order at 9:00 a.m. Dr. J. Stuart Lawrence, Philadelphia, read a paper entitled "Late Toxemia in Pregnancy."

Dr. William E. Parke, Philadelphia, read a paper entitled "What Cases of Eclampsia Shall We Section?" These two papers were discussed jointly by Drs. Paul Titus, Pittsburgh; Collin Foulkrod, Philadelphia; J. O. Arnold, Philadelphia; Charles Mazer, Philadelphia; Theodore B. Appel, Lancaster; Lida Stewart Cogill, Philadelphia; William E. Parke, Philadelphia; J. Stuart Lawrence, Philadelphia.

Dr. Paul Titus, Pittsburgh, read a paper entitled "Pyelitis in Pregnancy," which was discussed by Drs. Collin Foulkrod, Philadelphia; Leon Herman, Philadelphia; Dr. Titus in closing.

Dr. George M. Boyd, Philadelphia, read a paper entitled "Conservative Obstetrics," which was discussed by Drs. Collin Foulkrod, Philadelphia; Lida Stewart Cogill, Philadelphia; C. E. Thomson, Scranton; Fred Fisher, Jr., Erie; Dr. Boyd in closing.

Dr. George W. Crile, Cleveland, O., read a paper entitled "Treatment of Cancer of the Large Intestine," which was discussed by Drs. Damon B. Pfeiffer, Philadelphia; Harold L. Foss, Danville; Dr. Crile in closing.

Drs. Frank B. Block and H. M. Mikelberg, Philadelphia, presented a paper entitled "The Nonoperative Treatment of Pelvic Inflammatory Disease," which was read by Dr. Block. Discussed by Drs. George Erety Shoemaker, Philadelphia; Charles P. Noble, Philadelphia; Dr. Block in closing.

Adjourned 12:30 p.m.

MEMBERS REGISTERED IN SECTION ON SURGERY

Allegheny County Society—H. H. Meanor, Coraopolis; A. P. Fogleman, Munhall; C. H. Aufhammer, R. J. Behan, R. E. Brenneman, J. C. Burt, W. H. Cameron, W. F. Donaldson, R. M. Entwisle, J. A. Hawkins, H. P. Kohberger, L. H. Landon, H. A. Miller, J. A. Ruben, J. G. Steedle, V. D. Thomas, Paul Titus, Pittsburgh.

Beaver County Society—J. H. Wilson, Beaver.

Berks County Society—J. L. Bower, Philadelphia; J. M. Bertolet, O. E. Fox, W. D. Greisemer, Harold Hirshland, J. W. Kauffman, G. W. Kehl, W. A. Lebkicker, C. H. Shearer, Reading.

Blair County Society—J. D. Findley, C. L. Shultz, J. S. Taylor, Altoona; W. A. Nason, Roaring Spring.

Bradford County Society—Donald Guthrie, W. E. Lundblad, Sayre.

Butler County Society—R. B. Greer, Butler.

Cambria County Society—J. B. McAneny, E. E. Boyer, J. B. Lowman, C. B. Millhoff, Johnstown.

Chester County Society—D. P. Rettew, Jackson Taylor, Coatesville; Joseph Scattergood, W. W. Woodward, West Chester.

Clarion County Society—G. B. Woods, Curllsville.

Clearfield County Society—L. F. Stewart, S. J. Waterworth, W. O. Wilson, Clearfield; J. C. Sullivan, Dubois; A. C. Lynn, Phillipsburg.

Clinton County Society—G. D. Mervine, T. E. Teah, D. W. Thomas, R. B. Watson, Lock Haven.

Columbia County Society—R. F. Wear, Berwick.

Cumberland County Society—H. A. Spangler, Carlisle.

Dauphin County Society—E. A. Nicodemus, H. F. Smith, G. B. Stull, Harrisburg; E. R. Whipple, Steelton.

Delaware County Society—G. S. Armitage, H. M. Armitage, L. L. Dunn, W. E. Egbert, Harry Gallager, M. E. Lambichi, F. R. Nothnagle, A. M. Sharpe, Chester.

Elk County Society—W. C. Shaw, Ridgway; A. C. Luhr, St. Mary's.

Erie County Society—J. A. Darrow, Fred Fisher, Elmer Hess, Erie.

Fayette County Society—V. P. Pisula, Everson; A. E. Crow, W. A. McHugh, Jr., Uniontown.

Franklin County Society—L. H. Seaton, S. D. Shull, Chambersburg; T. H. Weagley, Marion.

Huntingdon County Society—C. G. Brumbaugh, H. C. Frontz, J. M. Johnston, Huntingdon; R. H. Moore, Trenton, N. J.

Jefferson County Society—S. M. Free, F. L. Schumacher, Dubois; F. A. Pringle, Punxsutawney.

Lackawanna County Society—F. L. Van Sickle, Harrisburg; R. J. Lloyd, Olyphant; H. W. Albertson, D. W. Evans, L. P. Gibbons, C. E. Thomson, J. M. Wainwright, D. A. Webb, Scranton.

Lancaster County Society—J. C. Stever, Bainbridge; J. P. Kennedy, Columbia; T. B. Appel, J. L. Atlee, N. E. Bitzer, P. P. Breneman, H. B. Davis, S. W. Miller, C. P. Stahr, Lancaster.

Lawrence County Society—E. U. Snyder, New Castle.

Lebanon County Society—W. H. Brubaker, W. H. Means, Lebanon.

Lehigh County Society—F. A. Fetherolf, M. S. Kleckner, R. L. Schaeffer, Allentown.

Luzerne County Society—Walter Lathrop, Hazleton; Lewis Edwards, M. C. Rumbaugh, Kingston; C. W. Prevost, Pittston; H. L. Whitney, Plymouth; H. B. Gibby, S. P. Mengel, W. S. Stewart, S. M. Wolfe, Wilkes-Barre.

Lycoming County Society—G. C. Davis, Milton; J. W. Albright, Muncy; A. F. Hardt, G. B. Klump, Williamsport.

Mercer County Society—A. M. O'Brien, Sharon.

Mifflin County Society—J. A. C. Clarkson, Lewistown.

Montgomery County Society—M. C. Sturgis, S. B. Sturgis, Ardmore; W. C. Sheehan, Chestnut Hill; W. N. Parkinson, Conshohocken; W. W. Dill, H. H. Drake, E. A. Krusen, F. T. Krusen, G. W. Miller, W. G. Miller, J. R. V. Wolfe, Norristown; C. F. Doran, J. E. Gotwals, Phœnixville; O. C. Heffner, J. E. Potter, H. D. Reed, Pottstown.

Montour County Society—H. L. Foss, Danville; J. P. Sheehan, Florence, S. C.

Northampton County Society—W. L. Estes, W. L. Estes, Jr., W. A. Finady, G. A. Petrulias, D. K. Santee, H. J. Schmoyer, L. A. Shoudy, W. P. Walker, Bethlehem; J. A. Betts, Paul Correll, Easton.

Northumberland County Society—G. W. Reese, Shamokin.

Philadelphia County Society—B. M. Anspach, J. C. Applegate, J. M. Asher, G. M. Astley, E. G. Whitten-Auge, W. W. Babcock, J. H. Baldwin, K. W. Baldwin, C. S. Barnes, E. W. Beach, Moses Behrend, B. R. Beltran, Raoul Bernett, J. C. Birdsall, F. B. Block, Samuel Bolton, F. F. Borzell, F. E. Boston, D. R. Bowen, G. M. Boyd, Robert Boyer, Franklin Brady, J. W. Bransfield, H. A. Brav, J. A. Broadfield, C. S. Brown, H. B. Brown, A. S. Carmany, P. J. Carreras, J. B. Carnett, Samuel Chartock, Louis Chodoff, G. M. Christine, W. L. Clark, A. H. Clayett, L. S. Cogill, A. E. Colcher, J. N. Coombs, N. B. Cooperman, W. S. Crosby, E. A. Crueger, J. M. Cunningham, J. F. Carrell, C. D. Daniel, J. B. Deaver, B. F. Devitt, D. J. Donnelly, G. M. Dorrance, J. L. Dukes, F. H. Elder, E. L. Eliason, W. T. Ellis, W. C. Ely, E. B. Everett, W. J. Ezickson, J. D. Farrar, H. C. Fish, S. L. Feldstein, J. M. Fisher, M. K. Fisher, Collin Foulkrod, Marie K. Formad, M. M. Franklin, H. G. Fretz, J. H. Frick, Z. M. K. Fulton, S. Leon Gans, L. N. Gartman, J. J. Gilbride, H. M. Ginsberg, J. H. Girvin, Samuel Goldberg, S. B. Goldsmith, S. F. Gordon, E. W. Grim, W. H. Haines, A. W. Hammer, F. C. Hammond, L. J. Hammond, G. C. Hanna, Hugh Hanna, William Hartz, Leon Herman, C. G. Herrman, E. M. Hewish, Addinell Hewson, H. Z. Hibshman, B. P. Hirst, Harry Hudson, D. T. Huston, R. H. Ivy, J. H. Jopson, T. B. L. Jordan, H. R. Kauders, F. E. Keene, R. C. Kevin, W. W. Kew, Louis Kimmelman, W. H. Kinney, E. R. Kirby, E. J. Klopp, N. L. Knipe, Wilmer Krusen, A. D. Kurtz, Ernest Laplace, G. M. Laws, W. E. Lee, M. R. Lewis, Benjamin Lipshutz, S. H. Lockrey, Ludwig Loeb, V. A. Loeb, Daniel Longaker, C. B. Longenecker, H. K. Longshore, J. E. Loughridge, S. DeW. Ludlum, C. B. Lull, L. E. McCrea, J. F. McDougald, J. E. McDowell, J. A. McGlinn, H. A. McKnight, D. R. MacCarroll, F. Hurst Maier, Bernard Mann, J. P. Mann, F. A. Mantz, C. F. Martin, H. C. Masland, G. B. Massey, Charles Mazer, C. S. Miller, G. P. Miller, M. T. Miller, M. B. Miller, C. F. Mitchell, E. E. Montgomery, C. Howard Moore, H. W. Moorhead, G. D. Morton, A. F. Moxey, J. H. Mudgett, E. C. Murphy, D. A. Myers, T. R. Neilson, C. P. Noble, C. P. O'Boyle, H. R. Owen, Arturo Padilla, W. E. Parker, R. C. Parrish, E. L. Peck, P. S. Pelouze, John Peoples, M. F. Percival, D. B. Pfeiffer, G. P. Pilling, Jr., W. E. Raken, J. S. Raudenbush, I. S. Ravdin, J. J. Reilly, C. B. Reynolds, J. L. Richards, H. M. Righter, J. F. Roderer, J. S. Rodman, J. Torrance Rugh, C. N. Russell, C. T. Russell, Jr., W. J. Ryan, A. G. Sampson, Henry Sangree, C. S. Schafer, C. W. Schaubel, J. T. Schell, E. A. Schumann, E. T. Scott, R. C. Seipel, S. R. Shaner, G. E. Shoemaker, E. P. L. Shope, C. H. P. Slaughter, George Slonimsky, P. G. Skillern, Jr., C. D. Smith, F. C. Smith, C. M. Smyth, Jr., H. N. Speer, John Speese, G. C. Speirs, J. M. Spellissy, T. C. Stellwagen, Louis Spitz, F. R. Sprague, T. S. Stewart, C. M. Stimson, I. P. Strittmatter, Harry Stuckert, H. H. Sutton, W. B. Swarthy, J. E. Sweet, A. W. Tallant, J. M. Taylor, W. J. Taylor, B. A. Thomas, T. T. Thomas, W. H. Thomas, W. J. Thudium, J. J. Toland, S. E. Tracy, Weiman Trager, J. P. Turner, Harry Ungerleider, M. E. Vogt, C. S. Wachs, M. P. Warmuth, A. B. Webster, J. R. Wells, H. R. Wharton, Frank White, A. D. Whiting, F. R. Widdowson, B. P. Widmann, DeF. P. Willard, P. F. Williams, A. C. Wood, J. K. W. Woods, L. J. Wojczynski, W. S. Wray, J. K. Young, Philadelphia.

Schuylkill County Society—J. C. Biddle, Ashland; G. O. O. Santee, Cressona; L. D. Heim, Schuylkill Haven; J. C. Gallagher, J. S. Monahan, Shenandoah.

Sullivan County Society—M. E. Herrman, Dushore.

Warren County Society—W. M. Robertson, Warren.

Washington County Society—C. L. Harsha, Canonsburg; J. H. Corwin, A. E. Thompson, Washington.

York County Society—J. H. Bittinger, J. A. Melsheimer, Hanover; W. F. Bacon, York.

MINUTES OF THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, October 4, 1921

The first session of the Section on Eye, Ear, Nose and Throat Diseases was called to order in the Junior Room of the Bellevue-Stratford at 2:10 p.m., Oct. 4, 1921, by the Chairman, Dr. Luther C. Peter of Philadelphia.

Dr. Peter first introduced two guests—Prof. J. Van der Hoeve of Leiden, Holland, and Dr. R. M. Law of New York City, and extended to them the privileges of the floor.

The Chairman then read his address, entitled "Obscure Forms of Posterior Uveitis; Their Relation to Sinus Disease and Especially the Lessons to be Learned Therefrom."

Dr. John J. Sullivan, Jr., Scranton, read a paper entitled "Nasal Accessory Sinus Disease; Report of One Hundred and Eleven Cases in Adults and Children Covering a Period of Two Years."

Dr. Leonard G. Redding, Scranton, read a paper entitled "Optic Neuritis Following Nasal Accessory Sinus Disease."

Dr. J. Leslie Davis, Philadelphia, read a paper on "Vaccine Therapy in Accessory Sinus Infection."

Dr. George B. Wood, Philadelphia, read a paper entitled "The Electric Drill in the Intranasal Maxillary Sinus Operation."

This symposium was discussed by Drs. Herbert M. Goddard, Philadelphia; Edward B. Heckel, Pittsburgh; William B. Hitschler, Philadelphia; George B. Jobson, Franklin; William Campbell Posey, Philadelphia; George C. Kneedler, Pittsburgh; J. Ferdinand Klinedinst, York; B. Alexander Randall, Philadelphia; Harvey M. Becker, Sunbury; H. Maxwell Langdon, Philadelphia; R. M. Law, New York City; Samuel Cohen, Philadelphia; and by Drs. Davis, Sullivan and Redding in closing.

Dr. H. Maxwell Langdon, Philadelphia, read a paper entitled "The Treatment of Concomitant Squint with Especial Reference to Training of the Fusion Sense."

This paper was discussed by Drs. Edward Weisser, Pittsburgh; William Zentmayer, Philadelphia; Prof. J. Van der Hoeve, Leiden, Holland; B. Alexander Randall, Philadelphia.

Dr. Frank C. Parker, Norristown, read a paper entitled "Gold Ball Implantation in the Scleral Cavity by the Dimitry Method."

This paper was discussed by Drs. J. Milton Griscom, Philadelphia; George H. Cross, Chester; Edward B. Heckel, Pittsburgh; Harvey M. Becker, Sunbury; Frederick Krauss, Philadelphia; Luther C. Peter, Philadelphia, and in closing by Dr. Parker.

The Section adjourned until Wednesday at 2 p.m.

Wednesday, October 5, 1921

The Section was called to order at 2:15 by the Chairman, Dr. Luther C. Peter, who first called for the report of the Executive Committee.

The Executive Committee, Dr. Edward B. Heckel, Chairman, presented the following names of officers for the ensuing year: Chairman, George M. Coates, Philadelphia; Secretary, William H. Sears, Huntingdon.

It was moved, seconded and unanimously carried that these men be elected to serve for the coming year.

Dr. P. H. Fridenberg, New York City, read a paper entitled "The Endocrine System; Some Relations to Ophthalmology and Otorhinology."

Dr. William Zentmayer, Philadelphia, read a paper entitled "Experimental and Clinical Evidences of the Relations of the Eye and the Endocrine Organs."

Dr. Henry A. Schatz, Philadelphia, read a paper entitled "The Rôle of the Thyroid in Otolaryngology; Experimental and Clinical Studies."

The above symposium was discussed by Drs. Robert Scott Lamb, Washington, D. C.; George M. Coates, Philadelphia; Prof. J. Van der Hoeve, Leiden, Holland; S. Lewis Ziegler, Philadelphia; S. MacCuen Smith, Philadelphia, and by Drs. Schatz, Zentmayer and Friedenberg in closing.

It was moved by Dr. S. Lewis Ziegler, Philadelphia, and duly seconded, that a vote of thanks be extended to Drs. P. H. Friedenberg and Robert Scott Lamb, for their presence and discussion of this symposium. Motion unanimously carried.

Dr. Nelson S. Weinberger, Sayre, read a paper on "Sympathetic Ophthalmia; Report of an Unusual Case." This paper was discussed by Drs. George H. Cross, Chester; Michael V. Ball, Warren; S. Lewis Ziegler, Philadelphia; Lewis H. Taylor, Wilkes-Barre, and in closing by Dr. Weinberger.

Dr. B. Alexander Randall, Philadelphia, read a paper entitled "Otitic Phlebitis Without Thrombosis." This paper was discussed by Drs. Ralph Butler, Philadelphia; Henry S. Wieder, Philadelphia; Benjamin H. Shuster, Philadelphia; and in closing by Dr. Randall.

The Section adjourned until 9 o'clock Thursday morning,

Thursday, October 6, 1921

The Thursday morning session was called to order at 9:10 by the Chairman, Dr. Luther C. Peter.

Dr. George R. Corson, Pottsville, presented a specimen—a hard substance removed from a tonsil.

Dr. George J. Jobson, Franklin, presented an instrument—a special seizing forceps to be used in tonsillectomy.

Dr. L. Webster Fox, Philadelphia, read a paper entitled "Vitreous Loss; Its Effect on the End Result of Cataract Extraction; Its Prevention."

This paper was discussed by Prof. J. Van der Hoeve, Leiden, Holland; Drs. William Campbell Posey, Philadelphia; Edw. A. Weisser, Pittsburgh; Edw. B. Heckel, Pittsburgh; Robert Scott Lamb, Washington, D. C.; and by Dr. Fox in closing.

Dr. Chevalier Jackson, Philadelphia, read a paper entitled "Moss-Agate Tracheal Sputum." This paper was discussed by Dr. J. Homer McCready, Pittsburgh.

Dr. Ellen J. Patterson, Pittsburgh, read a paper entitled "Pulmonary Abscess Due to Lodgment of a Tooth; Peroral Bronchoscopic Cure." This paper was discussed by Drs. Chevalier Jackson, Philadelphia; Michael V. Ball, Warren; J. Homer McCready, Pittsburgh, and the discussion closed by Dr. Patterson.

Dr. G. Oram Ring, Philadelphia, read a paper entitled "External Ophthalmoplegia Associated with Extensive Neuroretinitis; a Case Study." This paper was discussed by Dr. Peter N. K. Schwenk, Philadelphia.

Dr. S. MacCuen Smith, Philadelphia, read a paper entitled "The Present Status of the Radical Mastoid Operation." This paper was discussed by Drs. George W. Mackenzie, Philadelphia; Harvey M. Becker, Sunbury; Samuel Cohen, Philadelphia, and in closing by Dr. Smith.

The Section adjourned.

Members Registered in Section on Eye, Ear, Nose and Throat Diseases

Allegheny County Society—W. W. Blair, E. B. Heckel, G. C. Kneedler, G. J. McKee, E. J. Patterson, A. M. Stevenson, H. H. Turner, E. A. Weisser, Pittsburgh.

Armstrong County Society—J. B. F. Wyant, Kittanning.

Berks County Society—C. S. Keiser, H. H. Wanner, Reading; L. A. Wheeler, Wernersville.

Blair County Society—L. S. Walton, Altoona.

Bradford County Society—N. S. Weinberger, Sayre.

Bucks County Society—R. C. Magill, New Hope; O. H. Fretz, Quakertown.

Cambria County Society—Ray Parker, Philadelphia.

Carbon County Society—E. G. Bray, E. Mauch Chunk; C. J. Kistler, Lehighton.

Chester County Society—Howard Mellor, H. A. Rothrock, West Chester.

Clearfield County Society—F. K. Miller, Philadelphia.

Clinton County Society—S. J. McGhee, Lock Haven.

Dauphin County Society—J. F. Culp, Harrisburg.

Delaware County Society—G. H. Cross, A. V. B. Orr, C. I. Stiteler, A. E. White, Chester; P. C. Pike, Media.

Franklin County Society—F. N. Emmert, H. M. Stewart, Chambersburg.

Huntingdon County Society—W. H. Sears, Huntingdon.

Jefferson County Society—C. L. Maine, Dubois.

Lackawanna County Society—U. G. Anderson, Carbondale; J. P. O'Donnell, L. G. Redding, J. J. Sullivan, Jr., Scranton.

Lancaster County Society—W. G. Fox, W. B. Hamaker, J. P. Roebuck, T. C. Shookers, E. J. Stein, Lancaster.

Lebanon County Society—S. Z. Shope, Philadelphia.

Lehigh County Society—W. J. Hertz, J. W. Noble, G. F. Seiberling, Allentown; M. J. Backenstoe, Emaus.

Luzerne County Society—L. H. Taylor, Wilkes-Barre.

Lycoming County Society—W. F. Kunkle, Williamsport.

Mercer County Society—Edith MacBride, Sharon.

Monroe County Society—W. R. Levering, Stroudsburg.

Montgomery County Society—H. P. Lakin, Lansdale; E. G. Kriebel, F. C. Parker, Norristown; Chapin Carpenter, Wayne.

Montour County Society—Reid Nebinger, Danville.

Northampton County Society—P. H. Walter, Bethlehem; V. S. Messinger, Easton.

Northumberland County Society—H. M. Becker, Sunbury.

Philadelphia County Society—W. A. Annon, H. T. Antrim, L. F. Appleman, J. A. Babbitt, B. F. Baer, Jr., Louis Baer, P. L. Balentine, Aaron Barlow, A. F. Beck, R. W. Bemis, Bernard Berens, J. A. Bertolet, C. C. Biedert, A. L. Bishop, H. Winfield Boehringer, Aaron Bray, N. M. Brinkerhoff, C. P. Brown, S. H. Brown, S. A. Brumm, Mary Buchanan, J. T. Bunting, L. J. Burns, M. F. Butler, Ralph Butler, M. M. Butt, T. J. Byrne, W. L. Cariss, Frederic Carrier, A. D. Carter, F. M. Cleveland, G. M. Coates, H. B. Cohen, J. Solis-Cohen, Samuel Cohen, J. A. Colgan, T. E. Conrad, Alfred Cowan, J. W. Croskey; T. R. Currie, M. F. Cznbak, J. L. Davis, T. C. Davis, W. B. Davis, W. H. Deardorff, L. W. Deicher, Perce DeLong, R. H. Dengler, H. N. Diamond, Henry Dintenfass, J. L. Donahue, P. M. Edwards, Frank Embery, M. S. Ersner, C. C. Eves, G. T. Faris, C. L. Felt, Phillip Fischelis, Louis Fisher, J. R. Forst, L. W. Fox, C. P. Franklin, J. S. Fritch, Ralph Getelman, Mary Getty, H. M. Goddard, H. G. Goldberg, J. F. Gorman, W. H. L. Hale, W. D. W. Hall, E. G. Hawman, W. S. Hargett, W. F. Hebsacker, C. R. Heed, E. F. Hemminger, J. F. Herbert, Jr., W. M. Hinkle, W. A. Hitschler, C. R. Hughes, R. J. Hunter, D. N. Husek, Chevalier Jackson, E. E. Johnson, A. A. Jones, C. J. Jones, F. M. Katar, A. S. Kaufman, F. R. Keating, J. C. Keeler, R. N. Keely, A. J. Keenan, B. F. Kehler, G. F. J. Kelly, J. C. Knipe, Andrew Knox, Frederick Krauss, H. A. Laessle, H. M. Langdon, O. L. Latchford, G. A. Lawrence, Louis Lehrfeld, A. W. Legg, F. O. Lewis, J. E. Loftus, E. P. Longaker, H. H. Lott, L. F. Love, G. Y. MacCracken, R. A. W. McKeldin, Douglas Macfarlan, W. H. G. Mackay, G. W. Mackenzie, G. M. Marshall, L. E. Marter, J. H. Mendel, O. F. Mershon, E. B. Miller, Stephen Mitterling, C. C. Moore, W. F. Moore, S. W. Newmayer, William Nichols, C. A. O'Ceilly, H. Z. Off, S. L. Olsho, S. J. Ottinger, B. D. Parish, H. L. Picard, L. C. Peter, Michael Platt, L. A. Podolski, P. J. Pontius, W. C. Posey, McCluney Radcliffe, B. A. Randall, W. S. Reese, G. O. Ring, J. N. Rhoads, J. C. Rommel, J. M. Rosenthal, J. B. Rudolphy, W. Ruoff, L. A. Saltzman, P. J. Sartain, A. C. Sautter, H. W. Scarlett, H. A. Schatz, F. M. Schneideman, P. N. K. Schwenk, J. D. Seiberling, V. I. Seidel, W. J. Sener, W. T. Shoemaker, E. A. Shumway, B. H. Shuster, J. J. Simkins, R. H. Skillern, J. Sinexon, H. O. Sloane, J. I. Smith, S. MacC. Smith, C. M. Stiles, S. R. Stirling, G. C. Stout, P. S. Stout, F. M. Strouss, C. J. Swalm, W. M. Sweet, Grace Taukersley, R. A. Tomassene, Gabriel Tucker, J. B. Turner, E. L. Vansant, L. C. Vattier, A. J. Wagers, M. A. Warlow, W. W. Watson, W. N. Watson, W. Robertson Watson, Robert Watt, W. L. Weber, M. A. Weinstein, S. L. Weintraub, L. C. Wessels, Berta Whaland, H. S. Weider, H. J. Williams, S. M. Wilson, G. B. Wood, W. C. Wood, Arthur Wrigley, M. A. Zacks, William Zentmayer, S. Lewis Ziegler, Philadelphia.

Schuylkill County Society—J. J. Dailey, McAdoo; T. L. Williams, Mt. Carmel; G .R. S. Corson, Pottsville; G. H. Moore, Schuylkill Haven.

Venango County Society—G. B. Jobson, Franklin; F. E. Magee, Oil City; Clifford Cooper, Titusville.

Warren County Society—M. V. Ball, Warren.

Washington County Society—J. W. Ferman, Charleroi; G. B. Dunkle, J. B. McMurray, Washington.

Wyoming County Society—H. L. McKown, Tunkhannock.

York County Society—J. F. Klinedinst, York.

MINUTES OF THE SECTION ON PEDIATRICS

TUESDAY, OCTOBER 4, 1921

First session called to order Tuesday, October 4th, at 2 p. m., by Dr. Cartin, of Johnstown, Pa., Chairman, in the Red Room of the Bellevue-Stratford, Philadelphia. The afternoon program contained the following papers which were well discussed, and the total attendance at this session was about 150.

1. Address by the Chairman.
2. Post-Diphtheritic Paralysis was read by Dr. Theodore J. Elterich of Pittsburgh, and discussion opened by Dr. J. P. Crozer Griffith of Philadelphia.
3. Malnutrition as a Pretuberculous State in Children was read by Dr. John D. Donnelly of Philadelphia, and discussion opened by Dr. Thomas Klein of Philadelphia.
4. Nutrition Classes for Children was read by Dr. Sarah D. Wyckoff of Wilkes-Barre, Pa., and discussion opened by Dr. Charles H. Miner of Wilkes-Barre.
5. The Right of the Child to Health was read by Dr. Edwin A. Glenn of Berwick, Pa., and discussion opened by Dr. Samuel McC. Hamill of Philadelphia.
6. Splenic Anemia in Children was read by Dr. Ralph Engle of Philadelphia, and discussion opened by Dr. Edwin E. Graham of Philadelphia.
7. Basal Metabolism Studies in Constitutionally Inferior Children was read by Dr. Harry O. Pollock of Pittsburgh.

WEDNESDAY, OCTOBER 5, 1921

Second session called to order Wednesday, October 5th, at 2: 10 p. m., by Dr. Cartin, and the following report of the Executive Committee was submitted by Dr. Eaton:

> In the absence of the Secretary of the Executive Committee, I have been requested, as Chairman, to make this report.
>
> The Executive Committee desires to express its appreciation of the attendance which has so finely shown itself at this meeting. As you know, the Pediatric Section of the State Medical Society is in its sixth year, and all of us who are interested in pediatrics feel very strongly that this is a valuable section of the State Society, and that its work is good, and we all hope and believe that the interest in pediatrics over the whole state is going to be stimulated by the work done in this Section.
>
> The Executive Committee desires to make the following nominations for officers for the following year: For Chairman, Dr. Henry T. Price, of Pittsburgh; for Secretary, Dr. R. K. Rewalt, of Williamsport.

On motion duly made and seconded, the above named gentlemen were elected officers for the following year.

8. Dr. Thomas E. Mendenhall of Johnstown, Pa., did not appear to read his paper, as he was called West on account of serious illness in his family.

9. Importance of Nursing Slowly was read by Dr. Maurice Ostheimer of Philadelphia, and discussion opened by Dr. Percival J. Eaton of Pittsburgh.

10. The Difficulties and Practicability of Infant Feeding in a Country Practice was read by Dr. Fred P. Simpson of Mapleton Depot, Pa., and discussion opened by Dr. Herbert A. Bostock of Norristown, Pa.

11. Frequency of Indigestion of Fats During First Two Years of Life was read by Dr. John D. Stevenson of Beaver, Pa., and discussion opened by Dr. Theodore Le Boutillier of Philadelphia.

12. Vomiting as a Symptom in Childhood was read by Dr. Charles Gilmore Kerley of New York City, and discussion opened by Percival J. Eaton of Pittsburgh.

13. An Analysis of the Causes of Fever in Early Life With a View to Diagnosis was read by Dr. John C. Gittings of Philadelphia, and discussion opened by Dr. Howard Childs Carpenter of Philadelphia.

14. Xerodema Pigmentosum was read by Dr. William H. Guy of Pittsburgh, and discussion opened by Dr. Frank C. Knowles of Philadelphia.

This session was well attended and during the session about 175 people were present. The papers were enthusiastically received and well discussed.

THURSDAY, OCTOBER 6, 1921

Third session was called to order Thursday, October 6th, at 9:10 a.m., by Dr. Cartin, Chairman, and about 100 were present during the session.

15. Report of a Case of Suppurating Faciaitis with Extensive Inter- and Intramuscular Calcification was read by Dr. Harry Lowenburg of Philadelphia, and discussion opened by Dr. W. Wayne Babcock of Philadelphia.

16. Spasmophilia was read by Dr. John Mark Higgins, of Sayre, Pa., and discussion opened by Dr. A. Græme Mitchell of Philadelphia.

17. Enuresis—Its Causes and Treatment was read by Dr. Francis B. Jacobs of West Chester, and discussion opened by Dr. Henry Pleasant of West Chester, Pa.

18. Some of the Recent Tendencies in Infant Feeding was read by Dr. John Lovett Morse of Boston, Mass., and discussion opened by Dr. Alfred Hand of Philadelphia.

19. Cerebral Abscess Following Old Meningeal Hemorrhage was read by Henry C. Flood of Pittsburgh, and discussion opened by Dr. Henry T. Price of Pittsburgh.

20. A Study of Heart Cases in the Pediatric Dispensary at Jefferson Hospital was read by Dr. Ralph M. Tyson of Philadelphia, and was discussed by Dr. Edwin E. Graham of Philadelphia.

The visiting members of the Section were entertained at a luncheon by the Philadelphia Pediatric Society at the City Club, and one of the most successful and enthusiastic sessions of this Section was thereby closed. The official registration for the Pediatric Section was 110.

MEMBERS REGISTERED IN SECTION ON PEDIATRICS

Allegheny County Society—P. J. Eaton, T. J. Elterich, H. C. Flood, J. D. Iams, H. T. Price, Pittsburgh.

Beaver County Society—J. D. Stevenson, Beaver.

Bradford County Society—C. M. Coon, Athens; J. M. Higgins, Sayre.

Cambria County Society—G. R. Anderson, Barnesboro; F. U. Ferguson, Gallitzin; J. W. Barr, H. J. Cartin, R. C. Davis, W. E. Grove, Johnstown.

Clearfield County Society—G. E. Mauk, Woodland.

Delaware County Society—H. S. Kinne, R. B. Loughead, Katherine Ulrich, Chester.

Huntingdon County Society—J. M. Keichline, Jr., Huntingdon; F. P. Simpson, Mapleton Depot.

Lackawanna County Society—D. E. Berney, Scranton.

Lancaster County Society—H. B. Roop, Columbia; C. H. Witmer, Lancaster.

Lebanon County Society—J. DeW. Kerr, Lebanon; S. D. Bashore, Palmyra.

Lehigh County Society—F. R. Bausch, Allentown.

Luzerne County Society—E. L. Meyers, C. H. Miner, S. D. Wyckoff, Wilkes-Barre.

Lycoming County Society—R. K. Rewalt, Williamsport.

Monroe County Society—C. S. Flagler, Stroudsburg.

Montgomery County Society—Percival Nicholson, Ardmore; E. F. Corson, Cynwyd; C. G. Faries, Narberth; H. A. Bostock, W. R. Roberts, Norristown.

Philadelphia County Society—G. H. Atkins, H. S. Bachman, Emily P. Bacon, H. L. Bates, E. L. Bauer, L. B. Bender, R. M. Blitzstein, Rudolph Bloom, R. A. Bogia, J. M. Boice, W. N. Bradley, H. C. Carpenter, P. B. Cassidy, Radcliffe Chester, Dorothy Child, J. M. Connolly, W. S. Cornell, Morris Cornfeld, A. M. Dannenberg, J. D. Donnelly, R. L. Engle, C. A. Fife, Frederick Fraley, J. C. Gittings, Henry Golden, E. J. Goldring, E. L. Graf, E. E. Graham, J. P. C. Griffith, S. McC. Hamill, Alfred Hand, H. L. Hartley, E. M. Harvey, M. B. Herman, H. M. Hunsicker, Florizel Janvier, E. C. Jones, L. A. Kershner, F. C. Knowles, F. W. Konzelmann, W. W. Leach, F. H. Leavitt, D. A. Lebo, Theodore Le Boutillier, J. D. Leebron, J. V. Levi, Harry Lowenburg, R. T. McCombs, J. H. McKee, H. E. MacSorley, Edward Martin, Ralph Melman, I. S. Meyerhoff, W. M. Miller, H. B. Mills, A. G. Mitchell, F. C. O'Neill, J. F. O'Neill, Maurice Ostheimer, L. J. Rostow, Samuel Rubin, M. P. Ryan, J. F. Sinclair, A. E. Smiley, H. S. Snyderman, K. M. Starkey, C. N. Sturtevant, F. W. Thomas, Martha Tracy, R. M. Tyson, C. C. Watt, Jr., S. S. Woody, Philadelphia.

Somerset County Society—F. N. Shaffer, Somerset.

Washington County Society—C. C. Cracraft, Claysville.

MEMBERS REGISTERED; SECTION NOT DESIGNATED

Berks County Society—Hiester Bucher, Reading.

Bucks County Society—B. M. Peters, L. S. Wallou, Jenkintown; Henry Lovett, Langhorne; J. E. Packer, Newtown.

Carbon County Society—Alexander Armstrong, White Haven.

Columbia County Society—E. A. Glenn, Berwick.

Cumberland County Society—N. W. Hershner, Mechanicsburg.

Delaware County Society—H. C. Donahoo, Chester.

Lancaster County Society—J. L. Reisler, Bird in Hand.

Lehigh County Society—R. W. Bachman, C. D. Schaeffer, Allentown; R. C. King, Hellertown.

Lycoming County Society—A. P. Hull, Montgomery.

Montgomery County Society—G. R. Irwin, Bridgeport; J. B. Brown, Philadelphia.

Northampton County Society—C. F. Welden, Bethlehem.

Philadelphia County Society—Henry Artelt, F. B. Baird, R. L. Barnett, Henry Beates, Jr., C. R. Bridgett, J. P. Burns, L. S. Chapin, E. S. Cooke, E. B. Custer, A. W. Dunbar, J. C. Flynn, A. P. Francine, F. E. Freeman, T. R. Hartley, C. L. Hawkins, L. H. Jacobs, T. C. Kelly, Simon Kimmelman, F. E. Kraker, E. G. Maier, F. P. Manship, H. V. Marvel, T. Grier Miller, J. B. Nylin, C. E. Price, W. T. Rees, J. H. Remig, R. D. Rhein, G. G. Ron, J. P. Schaeffer, Herman Schaeff, H. C. Shurtleff, G. E. Spiegle, Oliver Stout, R. P. Sturr, Simon Tannebaum, J. A. Wagnetz, T. G. Weisenberg, L. R. Wiley, M. L. Yubas, R. V. Zabackes.

Snyder County Society—P. J. Herman, Selinsgrove.

GUESTS

Frederick Allen, Morristown, N. J.; H. T. Bailey, Phœnix, Ariz.; William F. Baker, Philadelphia; Llewellyn Barker, Baltimore, Md.; Charles S. Baskey, Akron, O.; William C. Behen, Dover, Del.; Oscar H. Brown, Ricenide, Cal.; Sing Lee Chang, Hang Chau, China; Franklin H. Church, Salem, N. J.; Elias Clouse, Toronto, Can.; George W. Crile, Cleveland, O.; Egerton Crispin, Los Angeles, Cal.; W. L. Curtis, Lincoln, Neb.; P. A. Ferrier, Pasadena, Cal.; P. H. Friedenberg, New York City; Claude E. Gilliatt, Allendale, Ill.; M. S. Henderson, Rochester, Minn.; Prof. J. Van der Hoeve, Leiden, Holland; Elliott Joslin, Boston, Mass.; Charles Kerley, New York City; J. P. Laird, Miami, Fla.; Robert Scott Lamb, Washington, D. C.; R. M. Law, New York City; J. J. R. MacLeod, Toronto, Can.; Lorenzo Freemont Milliken, Blair, W. Va.; John Lovett Morse, Boston, Mass.; Thomas G. Odell, Salt Lake City, Utah; Howard F. Palmer, Camden, N. J.; Charles S. Prest, New York City; Lily G. Roche, Trenton, N. J.; G. B. Scott, Birmingham, Ala.; Eustace M. Singleton, Marshalltown, Iowa; Harry C. Solomon, Boston, Mass.; H. Armin Sticher, Philadelphia; M. Webster Stofer, Norwich, N. Y.; James W. Thomas, Seattle, Wash.; Edythe Winn Welbourne, Columbia, S. C.; Tom A. Williams, Washington, D. C.

DELEGATES FROM SISTER SOCIETIES

Connecticut Medical Society—Robert Lee Rowley, Hartford, Conn.

United States Pharmacopeial Association—O. F. Wolf, Pittsburgh.

MINUTES OF THE CONFERENCE OF SECRETARIES

The Sixteenth Annual Conference of the Secretaries of the Component County Medical Societies of the Medical Society of the State of Pennsylvania, was held on the roof garden of the Bellevue-Stratford Hotel, Philadelphia, October 4, 1921.

The meeting was called to order at 5:25 p. m., by the Chairman, Dr. J. B. F. Wyant, of Armstrong County. After some appropriate remarks by the Chairman, the Secretary read the minutes of the last meeting which were approved.

The first paper on "Our Medical Defense Fund," by Dr. C. L. Stevens, Athens, was most interesting and instructive and brought forth some discussion.

Following Dr. Stevens' paper, Dr. Ira G. Shoemaker, Councilor for the Third District, read a very interesting and illuminating paper on "The Medical Society as a Factor in Moulding Public Opinion and Public Health Legislation."

Others on the program read interesting papers setting forth methods employed by other secretaries to increase attendance and interest at our scientific meetings as follows: "How We Increased Our Membership Twenty Per Cent," Secretary Butz, Lehigh County Medical Society; "Team Work—Essential to a Real Society," Secretary Lewis, Lackawanna County Medical Society.

The papers of the evening were discussed by Drs. Brenholtz, Heath, Cracraft and Boice.

Dr. Frank G. Hartman, President of the Medical Society of the State of Pennsylvania, was then introduced and spoke briefly of the work of the secretaries.

As Nominating Committee, the Chairman appointed Drs. A. F. Meyers, Bucks County; E. L. Meyers, Luzerne County; and E. S. Buyers, Montgomery County, to report later in the evening.

The Conference then adjourned to the Banquet Hall where thirty-six (36) Secretaries and their friends partook of a delightful dinner, following which the Nominating Committee reported as follows: Chairman, John M. Quigley, Clearfield County; Vice-Chairman, M. Edith McBride, Mercer County; Secretary, Joseph Scattergood, Chester County; Executive Committee, Elmer L. Meyers, Luzerne County; John E. Livingood, Berks County; Charles C. Cracraft, Washington County.

Following the election of officers, remarks were made by Drs. H. C. Frontz, Mitchell, Albertson, Shoemaker, Moyer, Donaldson, Van Sickle and Stevens.

A letter from Dr. H. C. McKinley, Secretary of the Somerset County Medical Society, was read by the Secretary. Dr. McKinley is 81 years old, and has been Secretary of the Somerset County Medical Society for 32 years.

Adjourned at 8:40 p. m.

STATE NEWS ITEMS

DEATHS

Dr. Samuel W. Badger, Athens, died September 27th, aged 74 years. He was a graduate of the Bellevue Hospital Medical College, of New York, 1873.

Dr. Herman A. Brav, Philadelphia, died October 12, 1921. He was born in 1870, and graduated from the Medico-Chirurgical College of Pennsylvania, in 1898.

Dr. Joseph K. Weaver, Norristown, died early in October, 1921. He was born in 1838, and graduated from Jefferson Medical College of Philadelphia in 1867. Doctor Weaver bears the distinction of having been the first surgeon-general of the National Guard of Pennsylvania.

Dr. Walter Lytle Pyle, Philadelphia, died suddenly at his home in Merion, October 8th. Doctor Pyle was born in 1871 and was a lineal descendant of Robert Pyle, of Wiltshire, England, who came to America with William Penn in 1684. He graduated from the University of Pennsylvania, School of Medicine, in 1893, where he specialized in ophthalmology.

In the death of Dr. L. Dent Allison on October 1, 1921, the last member of a well-known family of Armstrong County physicians passed away. Dr. Allison was born in 1877, and was the son of the late Dr. Thomas M. Allison and the grandson of Dr. Thomas H. Allison, both prominent and active members of the county medical society.

After completing his work in the public schools of his home town, Dr. Allison attended the Kiskiminitis Preparatory School and also graduated from Washington and Jefferson College in 1899. He then studied medicine with his father and finished his course by graduation from the Jefferson Medical College of Philadelphia in 1903, after which he located in Kittanning and continued in practice until ill health compelled him to retire. Dr. Allison was always active in his medical society. He served as president and was on the Board of Censors continuously from the time he became a member.

In 1916 Dr. Allison was united in marriage to Miss Miller Comacr. He is survived by his wife, his mother, his sister, and two children.

Dr. Milton Howard Fussell, of Philadelphia, died on October 15, 1921, aged 66 years. He graduated from the Medical Department of the University of Pennsylvania in 1884, after which he became a member of the teaching staff of the Medical Department in the same University, and served in this capacity from 1901 until 1911. Since 1911 he was Professor of Applied Therapeutics up until the time of his death, which occurred suddenly on the morning of the 15th.

Dr. Fussell was a member of the Association of American Physicians, the American Medical Association, the Medical Society of the State of Pennsylvania, the College of Physicians of Philadelphia, the Philadelphia Pathological Society, the Philadelphia Pediatric Society and the Philadelphia County Medical Society, in whose activities he was a constant participant. He was also an active member of the boards of a number of medicosocial and philanthropic agencies in Philadelphia and a member of the visiting staffs of the Memorial, the Episcopal, St. Timothy's and the Chestnut Hill Hospitals.

Dr. Fussell's was a very unusual career. From a hard struggle for existence in the beginning he educated himself in medicine and early displayed rare ability as a teacher and clinician, ultimately acquiring a large general practice and probably the largest consulting practice in Philadelphia and the State of Pennsylvania. Dr. Fussell was widely known and his loss will be felt by all his friends and associates in the medical profession.

The medical profession of the state has sustained a severe loss in the death of Dr. Victor P. Chaapel of Williamsport, on October 16, 1921.

Dr. Chaapel, who was one of the best known citizens of his home city, was born in Leroy, Bradford County, in 1864. He attended the Muncy Normal School and taught for several years before taking up the study of medicine. In 1892 he graduated from the College of Physicians and Surgeons at Baltimore, and for three and a half years practiced his profession in Irvona, Clearfield County. In 1896 he located in Williamsport, where he practiced medicine continuously, until several months ago failing health compelled him to give up active work.

Dr. Chaapel was an active member of the Lycoming County Medical Society, and in 1920 served as the president of the organization. He was a member of the House of Delegates of the Medical Society of the State of Pennsylvania at the Pittsburgh Session, in 1920, and attended the sessions of the American Medical Association in June as a delegate from this Society. He was also recently elected Second Vice-President of the Society.

The deceased is survived by his wife and three daughters—Victoria, Eloise and Helen.

While Doctor Chaapel's death was not unexpected by his many friends and associates, it came as a shock and left deep regret over the passing of a man whose work and reputation had dignified the profession in the community in which he lived.

BIRTHS

Born—August 11, 1921, to Dr. and Mrs. W. E. Boyer, Williamsport, a daughter, Margaret Estella.

Dr. and Mrs. John M. Cruice, of Philadelphia, have been receiving congratulations on the birth of a son on October 13th.

ENGAGEMENTS AND MARRIAGES

The marriage of Miss Eileen Cecelia O'Donnell, of Washington, D. C., and Dr. John Mark Higgins, of Sayre, on October 12th, has been announced.

Dr. and Mrs. Francis E. Stewart, of Philadelphia, announce the engagement of their daughter, Miss Mildred Penrose Stewart, to Mr. Gilbert M. Tucker, Jr., of Albany.

Dr. and Mrs. H. F. Gross, of Harrisburg, have announced the marriage of their daughter, Miss Mae Gross, and Mr. John L. Menger, son of Mr. and Mrs. N. H. Menger, of Harrisburg.

The marriage of Miss Mary Riley League, daughter of Mr. and Mrs. Harry Mortimer League, of Haverford, to Dr. Nathan P. Stauffer, of Philadelphia, will take place on Thursday night, December 1st.

The marriage of Miss Ruth Smith, daughter of Mr. and Mrs. Basil Liberty Smith, of Philadelphia, and Mr. John Eyre Shaw took place October 1. Mr. Shaw is a son of Dr. and Mrs. Ralph Butler, of Philadelphia.

ITEMS

Dr. H. Wilson Levengood, of Ocean Park, Calif., visited his parents, Mr. and Mrs. Henry W. Levengood, of Pottstown, during the month of October.

Dr. A. M. O'Brien, of Sharon, spent a week in New York after attending the Pennsylvania State Medical Society Meeting in Philadelphia.

Dr. and Mrs. F. C. Potter, of the Mercer Sanitarium, Mercer, Pa., visited in Scranton after attending the Pennsylvania State Medical Society Meeting.

The Kimberly Charitable Fund gave five thousand dollars to the new hospital at Grove City, Pa., to purchase an x-ray machine. Dr. Allen P. Hyde, of Sharon, selected the machine.

Dr. John B. Price, of Lancaster, has received an appointment to the Clinical Staff of the Wills Eye Hospital, in the service of Dr. McCluney Radcliffe and will spend one day a week at the Hospital.

Dr. John B. Deaver, of Philadelphia, has recently been installed President of the American College of Surgeons, which held its eleventh annual session in the Bellevue-Stratford Hotel during the month of October.

Dr. E. D. Funk, of Reading, formerly associated with the Department of Pathology in the Jefferson Medical College Hospital at Philadelphia, has assumed his duties as resident pathologist to the Reading Hospital.

Dr. S. Lewis Ziegler, of Philadelphia, gave a dinner party on the night of October 17th for Prof. J. Van der Hoev, of Leiden, Holland, who was a guest of honor of the American Academy of Ophthalmology and Otolaryngology. Dr. and Mrs. Ziegler also entertained at a reception on Tuesday afternoon, October 18th, for wives of the physicians who came to the city to attend the meeting.

A clinic and nutrition class was conducted by the Washington, Pa., Public Health Association during the summer. The work was done under the direction of Miss Gamble, School Nurse. In thirty-eight cases tonsils were removed, forty were treated for tuberculosis, and sixteen received dental care. A number of the local physicians gave much of their time to the work. Mrs. A. O. Hildebrand writes that the work was so worth while that they are considering work of a similar nature for this winter.

The seventy-fifth anniversary session of the Pennsylvania Association of Dental Surgeons was held at the Bellevue-Stratford Hotel, Philadelphia, October 12th to 15th. The Academy of Stomatology, the North Philadelphia Dental Society and the Odontographic Society of West Philadelphia joined with the Association in commemorating this event, important in the annals of the dental profession. In addition to the scientific program a series of clinics and graduate courses were open to the members, and a banquet was held at the Bellevue-Stratford on Saturday, the 15th.

On September 26, 1921, an Alumni Association including the graduates of the Medical Department of the University of Pittsburgh, was organized. Over 100 members were present at the organization meeting. The following officers were elected: President, R. J. Behan, M.D.; Vice-President, Calvin C. Marshall, M.D.; Secretary, H. J. Benz, M.D.; Treasurer, H. E. McGuire, M.D.; Executive Committee (3 years), E. A. Weiss, M.D.; E. E. Mayer, M.D.; C. J. Vaux, M.D.; (2 years) J. W. Boyce, M.D.; Harold Miller, M.D.; "Hube" Wagner, M.D.; (1 year) J. A. Hawkins, M.D.; T. G. Jenny, M.D.; Ralph Robinson, M.D.

Commencement exercises were held on Friday evening, October 14, 1921, at eight o'clock, at the Mercer Sanitarium, Mercer, Pa., in the presence of about one hundred and twenty-five guests. Three nurses were graduated from the Training School of the Sanitarium. The place was attractively decorated in autumn leaves and flowers. Music was furnished by Reese's

Orchestra, of Greenville. Dr. Duncan, of Mercer, offered prayer, Dr. George W. Wright, of Pittsburgh, gave an address. Dr. W. W. Richardson, Medical Director of the Sanitarium, presented the pins. A reception followed, Dr. and Mrs. Richardson receiving, together with Dr. and Mrs. Ingraham, Dr. and Mrs. F. C. Potter, Dr. George W. Wright, Dr. Duncan and Miss Leese. The guests adjourned to the dining room where a bountiful and delicious luncheon was served. Dancing followed.

The Industrial Relations Conference, held in Harrisburg, October 24-27, was one of unusual interest. The General Chairman of these meetings was Dr. Clifford B. Connelley, Commissioner of the Department of Labor and Industry, who is to be congratulated on the success of the Conference.

The Honorable William C. Sproul, Governor of Pennsylvania, opened the Conference with an address of welcome, and many distinguished visitors participated. Industrial problems were discussed from every angle and special attention was directed to industrial education, medical supervision in industry and workmen's compensation.

The afternoon meeting on October 27th was especially interesting to medical men, at which Colonel Edward Martin, Commissioner of Health, spoke on "The Maintenance of Community Health," and General Lewis T. Bryant, New Jersey Commissioner of Labor, spoke on "The Rehabilitation of the Industrial Cripple."

An Industrial Welfare Exhibit was held at the Penn-Harris Hotel in conjunction with the Conference. Material relating to industrial efficiency was shown, such as fire prevention and protection, safety devices, illumination, first aid, health, hygiene, welfare, etc. The Museum of Safety Appliances of the Department of Labor and Industry, located at the Masonic Temple, was open to the public for the first time, where the visitors viewed over three hundred safety appliances of all types that have been approved by the State Industrial Board.

On October 3, 1921, forty-seven members of the 1911 class of the Medical Department of the University of Pennsylvania met in Philadelphia to celebrate their tenth anniversary since their graduation. An elaborate dinner was served, which was followed by music and select entertainment. Each visiting member was called upon for brief remarks by the President, George Wilson, M.D., of Philadelphia. The following officers were elected: President, George Wilson, M.D.; Historian, Harvey Updegrove, M.D., Easton, Pa.; Secy-Treas., Wilbur H. Haines, M.D., Philadelphia, Pa.

The following were present: Edward W. McCloskey, M.D., Truman G. Schnabel, M.D., Hunter W. Scarlett, M.D., James A. Smith, M.D., Herman E. Albrecht, M.D., Frederick H. Leavitt, M.D., T. Grier Miller, M.D., Wm. John Ryan, M.D., Wilbur H. Haines, M.D., Edmund B. Piper, M.D., William A. Swalm, M.D., John P. Chapman, M.D., Irwin S. Meyerhoff, M.D., Joseph G. Hickey, M.D., Joseph C. Birdsall, M.D., Benj. M. McIntire, M.D., Arthur H. Gerhard, M.D., David N. Kremer, M.D., Francis C. O'Neill, M.D., Max Abramovitz, M.D., Herman Trager, M.D., Abram E. Oliensis, M.D., George Wilson, M.D., Philadelphia, Pa.; Austin J. Canning, M.D., Washington, D. C.; Theodore Blum, M.D., Conrad Berens, M.D., New York City; William A. McHugh, M.D., George H. Hess, M.D., Uniontown, Pa.; David Ward Scanlan, M.D., S. Worth Clark, M.D., Atlantic City, N. J.; John L. Eynon, M.D., Chester, Pa.; Arthur J. Casselman, M.D., Camden, N. J.; Franklin J. Tobey, M.D., Newark, N. J.; Franklin J. Reeves, M.D., Bridgeton, N. J.; William H. McCormick, M.D., Perth Amboy, N. J.; Homer D. Baird, M.D., York, Pa.; Isaac I. Parsons, M.D., Media, Pa.; Thomas A. Ratliff, M.D., Cincinnati, O.; Elmer Hess, M.D., Erie, Pa.; Paul A. Ferrier, M.D., Pasadena, Cal.; Frank F. D. Reckord, M.D., Harrisburg, Pa.; Charles S. Flagler, M.D., Stroudsburg, Pa.; J. Elmer Gotwals, M.D., Phœnixville, Pa.; Harvey C. Updegrove, M.D., Easton, Pa.; Richard W. Spicer, M.D., Goldsboro, N. C.; William S. Middleton, M.D., Madison, Wis.

GENERAL NEWS ITEMS

Help the National and State Tuberculosis Association in their crusade to stamp out the White Plague, by purchasing and using Christmas Seals. Local committees to superintend their sale have been organized, and they will be sold in every city and town throughout the state.

The second annual meeting of the National Anesthesia Research Society was held in Kansas City during the week of October 24th. The Society has grown until it now numbers over 300 members, many of whom come from China, Australia, England, Ireland, Cuba and Canada.

General Alfred Alexander Woodhull died at his home in Princeton, N. J., on October 18, 1921. He was born in Princeton, April 13, 1837. An alumnus of Lawrenceville School and Princeton University, he studied medicine at the University of Pennsylvania, being graduated in 1859. He gained his A.M. degree at Princeton in 1859 and the honorary degree of LL.D in 1894. Serving in the medical corps of the United States Army in the Civil and Spanish Wars and rising from lieutenant to brigadier general, he was placed on the retired list in 1904.

Dr. Thomas J. Orbison, University of Pennsylvania, 1898, who has just returned from Letvia, where he has been organizing relief work of the American Relief Administration, Emergency Children's Fund, recently told of some of his experiences incident to the stupendous task of feeding 80,000 undernourished children every day with food shipped thousands of miles, and of establishing clinics in remote places where medical attention had been previously almost unknown. Dr. Orbison, who before the war was a nerve specialist, practicing in Los Angeles, enlisted in the Medical Corps shortly after the United States entered the war. Later, after doing prolonged service overseas, he was appointed to organize the relief work in Letvia. In speaking of general conditions in both the Baltic provinces and Russia, Dr. Orbison said: "The Baltic provinces are not nearly as desperate in their political and economic positions as is Russia. Letvia has magnificent factories, none of which are now in operation. They are afraid of the influence of outside capital, which is unfortunate, since otherwise it would be possible to start up these factories and bring a larger measure of prosperity to that country. They have no money with which to start them for themselves. As for Russia, Russia is being healed gradually and slowly. If she is let alone for a while she will emerge from her period of darkness a strong, powerful nation. But it will take a long time."

On October 24th regulations permitting the manufacture and use of beer for medicinal purposes were issued by the Treasury Department. These regulations had been withheld since March 3 last, when former Attorney General Palmer held the use of beer as a medicine to be legal under the prohibition laws.

Secretary Mellon, in announcing the issuance of the beer rules, declared that "the legal rights of the parties concerned being plain, the Department is unable longer to delay the issuance of these regulations."

Besides beer the regulations permit the use for medical purposes of other intoxicating malt liquors such as ale, porter, malt extracts and similar fermented malt liquors containing one-half of one per cent or more of alcohol by volume. The new rules cover comprehensively the use of beer, wines and spirituous liquors as medicines. The amount of beer a physician may prescribe at one time for the use of the same person is limited to two and one-half gallons, the equivalent of a case. But no arbitrary limit is placed upon the number of such prescriptions a physician may write or the same person may obtain within a given period. Two quarts of wine was the limit put upon the single prescription for that beverage, but otherwise the regulations are the same as for beer. Spirituous liquors are limited to one pint within any ten-day period, and alcohol for external use was limited to a pint to the same person at one time.

Prescriptions for these medicines may be filled only by a licensed pharmacist, who is also a retail druggist, or a licensed pharmacist in the employ of a retail druggist. Prescriptions are not refillable, and the regulations declare that a pharmacist "should refuse to fill any prescription for liquor if he has any reason to believe that physicians are prescribing for other than medical uses or that a patient is securing through one or more physicians quantities of intoxicating liquor in excess of the amount necessary for medicinal purposes."

The right to prescribe distilled spirits, wines and malt liquors for medical purposes is confined by the regulation to such physicians as have obtained permits to prescribe intoxicating liquor. Such a physician may prescribe for a person upon whom he is in attendance if, after physical examination of such person, or if physical examination is impracticable, upon the best information obtainable, the physician believes that the internal or external use of such liquor as a medicine by such person is necessary and will afford relief to him from some known ailment.

The Americal Academy of Opthalmology and Otolaryngology held a scientific session at the Bellevue-Stratford on Thursday, October 19th. Demonstrations were given of the great progress made along the line of new devices. Dr. Walter Lancaster, of Boston, explained the numerous forms of magnets used in removing metal from the eye, and presented an interesting table of results achieved with various improved types of electro magnets. Dr. W. L. Dean, of Iowa City, exhibited his new instrument which is capable of measuring tones, heretofore unknown to auditory perception. Dr. James King, of New York City, pointed out that when eyes go bad, it is not always due to trouble in the eyes, but more often due to infection in tissue around the eyes. As an example of this, he presented a case of total blindness in both eyes which was fully cured by draining fluid out of a cavity to either side of the bridge of the nose. This fluid had been pressing upon the optic nerve, and once the pressure was relieved sight was restored. Use of radium and the roentgen ray in the treatment of tumors about the eye, was the earnest plea made by Dr. E. B. Heckel, of Pittsburgh, in demonstrating the success which he asserted he has obtained with these in his practice. Often a cancerous growth is removed by the radium needle, which not only saves the life of the patient, but minimizes in a great measure the deformity of the face, he declared.

The convention next year is to be held in Minneapolis. Officers elected are: Dr. Walter R. Parker, of Detroit, president; Dr. Ross P. Skillern, Philadelphia, first vice-president; Dr. S. H. Large, Cleveland, treasurer; Dr. W. P. Wherry, secretary of the postgraduate section.

BOOK REVIEW

SURGICAL CLINICS OF NORTH AMERICA.

Philadelphia Number, February 1921.—Vol. 1, Number 1. By Philadelphia Surgeons. Octavo of 259 pages, with 112 illustrations. Philadelphia and London: W. B. Saunders Company.

The initial number of this publication indicates that it is a continuation of the Surgical Clinics, formerly published by the well known house of W. B. Saunders Company, limited to Chicago members of the medical profession. This broadening of the field will give the periodical a wider interest to surgical readers.

It is complimentary to Philadelphia, the birth place of American medical education, that this issue of the publication is devoted to Philadelphia surgical work.

The introductory article, devoted to suggestions on the preparation of surgical manuscripts, is by the veteran W. W. Keen and should be read and committed to memory by every man who writes a paper for a medical journal.

The list of contributors to the surgical articles proper are ten in number. Their names are Deaver, J. B., DaCosta, J. C., Clark, Frazier, Ashurst, Gibbon, Nassau, Thomas, Jopson and Muller. The illustrations are extremely valuable, the topics up to date, the practical teaching scattered through the pages of great value.

Muller's clinic on Development Exostoses in the Young Resembling Sarcoma, is a good illustration of the necessity of diagnosis in tumors of the extremity before performing amputation or resection.

Deaver's paper on Pancreatitis, occupying 35 pages, is an elaborate production on embryology, morbid anatomy and histology, such as is seldom seen in the output of operating surgeons.

Paget's disease of the bones is discussed by J. Chalmers DaCosta, and is an interesting contribution to the subject of bone diseases. Curiously enough one of the most interesting papers in the last number of the Surgical Clinics, preceding this new form of clinical journalism, was on Bone Cysts, by Dr. Albert H. Montgomery, of the Presbyterian Hospital in Chicago.

The lecture by DaCosta, that, by Muller, in the book under review, and that just mentioned on "Bone Cysts" by Montgomery of Chicago, taken together would make a very instructive surgical brochure.

Other papers in this Volume of North American Surgical Clinics, are on Trigeminal Neuralgia, Carcinoma of the Breast, Fractures, Presenile Gangrene, and other surgical conditions of general interest to surgical practitioners. J. B. R.

TUBERCULOSIS AND HOW TO COMBAT IT.

A Book For the Patient and His Friends, by Francis M. Pottenger, A.M., M.D., LL.D., F.A.C.P. C. V. Mosby Company, Publishers, St. Louis, Mo., 1921. Price $2.00.

In ancient and mediaeval times there was no such thing as the popularization of knowledge. Learning was difficult to acquire and was the exclusive possession of the few who to obtain it had gone through a long period of apprenticeship during which their ability to make use of it was assured, and their willingness to guard it from profanation at the hands of the ignorant and vulgar avowed. Perhaps we have departed too widely from the ancient system in these days, when there is thirst for knowledge on the part of those not always able to understand it, and a desire to popularize it on the part of its exponents.

The book under consideration is a case in point. Dr. Pottenger desires to lay before his patients and their friends such knowledge of tuberculosis as he has acquired in many years of treating the disease upon which he specializes, and which he believes will be helpful to them in their attempts to get well. The intention is laudable but the execution is bad. From beginning to end there is hopeless confusion of fact with theory. Here is what we learned from an unusually careful perusal of the book:

The general prevalence of tuberculosis is such as to make practically all human beings subject to infection before the fifteenth year of life. This infection, if from large doses of bacilli, may kill, but ordinarily it is from small doses and instead of producing clinical tuberculosis and making the individual ill, it is of the greatest benefit to him because it immunizes him to the bacilli that may subsequently get into his body, and so protects him for all time. But no matter how carefully he conducts himself—where he lives, what he wears, what he eats, or how he works,—these same bacilli may at any moment begin to invade his tissues, and bring about clinical tuberculosis from which he may die. But the development of this disease is of the greatest advantage to him because he will then consult a good physician who will tell him how to live so as to overcome the disease, that it may never get him.

The good physician whom he consults will tell the patient that all the rest of his life must be spent in fighting the disease and keeping well. He will also tell him that it makes no difference what serious symptoms he has he is all right and may get well, and that it makes no difference where he goes or what he wears, or what he eats, or what medicine he takes, or whether he remains at home or goes abroad, or whether he lives in the open air or stays in doors, in the city or in the country, at the sea-shore or among the mountains he may get well.

The delightfully optimistic atmosphere of the book has never been excelled in our experience. It is an advantage to become infected! It is an advantage to become ill with the disease! The first exempts one from further infection, the last places one in the position of learning how to live.

"Why worry?" exclaims the author; "Worry never helps; but on the contrary always hinders. Regardless of the fact that nothing but harm can be gained by it, everybody worries somewhat." This is quite consistent with what follows in a later chapter—"Today all has changed and tuberculosis, when intelligently treated at the proper time, has become one of the most hopeful of chronic diseases."***"In fact there are few diseases which offer a better prognosis when intelligently treated than early tuberculosis."

We suspect that the author would be obliged to write another book if he were called upon to answer all the questions that we should like to ask him about this one. But fortunately patients are not so logical as reviewers, nor need they be so critical. Most of the views presented are current theories of the disease, and much of the advice is good. The optimism is excellent and in small doses may be just what the average patient needs.

J. McF.

RATIONAL TREATMENT OF TUBERCULOSIS. By Charles Sabourin, M.D., Medical Director of the Durtol Sanatorium, Puy-de-Dôme, France. Published by F. A. Davis Company, Philadelphia, Pa., 439 pages, price $3.50 net. Authorized English translation from the sixth, revised, enlarged French edition.

The book is divided into three parts. Under part one, which consists of seven chapters covering fifty-eight pages, is discussed the curability of tuberculosis. In part two which makes up the bulk of the book, consisting of ten chapters and 313 pages, the rational treatment of tuberculosis is taken up. Part three, four chapters and fifty-nine pages, deals with the social hygiene of tuberculosis.

This book is written in an easy, free manner, and its simplicity is one of its outstanding features. The subject is treated well and the text is concise and entertaining. The reviewer was surprised to read, however, that the tuberculous origin of such skin conditions as psoriasis, erythema nodosum, herpes zoster, vitiligo and others was thought highly probable by the author.

G. W.

EYE, EAR, NOSE AND THROAT NURSING. By A. Edward Davis, A.M., M.D., Professor of Diseases of the Eye in the New York Postgraduate Medical School and Hospital, and Beaman Douglass, M.D., Professor of Diseases of the Nose and Throat in the New York Postgraduate Medical School and Hospital. Second Revised Edition with 32 Illustrattrations. F. A. Davis Company, Publishers, 1920. 346 Pages. Price $2.50 Net.

This small volume will be found exceedingly useful by both nurse and practitioner who are doing special work. Conditions before, during, and after operation are treated in a way to show the nurse how to work correctly and how to do things in a way which distinguishes special from general nursing. The exactness and detail necessary in eye, ear, nose and throat nursing are fully emphasized. Special hospitals will find it a valuable text-book and nurses, contemplating a special training for hospital or office, will find it invaluable.

G. F. G.

THE MEDICAL CLINICS OF NORTH AMERICA. May 1921. Index Number. Boston Number.—Vol. 4, number 6. Philadelphia and London: W. B. Saunders Company.

The present volume of the Clinics contains timely articles on interesting topics as follows: Diuretics, by Dr. H. A. Christian; Hypertension, by Dr. J. P. O'Hare; Diabetes, by Dr. E. P. Joslin; Anemia, by D . G. R. Minot; Hay-fever, by Dr. I. C. Walker; Asthma, by Dr. F. M. Rackemann; Subdiaphragmatic Inflammatory Conditions, by Dr. R. I. Lee; Typhus, by Dr. F. W. Palfrey and Dr. S. B. Wolbach; Rapid Heart-action, by Dr. S. A. Levine; the Electrocardiagram, by Dr. P. D. White and Dr. C. S. Burwell; Vital Capacity of the Lungs, by Dr. F. W. Peabody; Syphilis of the Lungs, by Dr. E. A. Locke; Malignant Disease of the Lungs, by Dr. W. H. Robey; Functional Gastro-intestinal Disturbances, by Dr. C. W. McClure; Spinal Tumor, by Dr. F. T. Lord; Chorea, by Dr. S. Cobb; Size and Weight of Boarding School Boys, by Dr. H. Gray.

A. A. E.

A PRIMER FOR DIABETIC PATIENTS. A Brief Outline of the Principles of Diabetic Treatment, Sample Menus, Recipes and Food Tables. By Russell M. Wilder, M.D., May A. Foley, and Daisy Ellithorpe, Dietetians, The Mayo Clinic. 12mo of 76 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $1.50 net.

The authors of this small but extremely useful volume might well have added a longer but equally applicable subtitle as—"A Primer for Physicians Who Assume the Responsibility for the Supervision of the Health of Diabetic Patients."

The book has been prepared with great care after an extensive practical experience with the dietary problems of diabetic patients and with the thought in mind that a plain statement of the scientific principles underlying the dietary treatment of diabetes with helpful suggestions for the preparation of appetizing menus would be useful to place in the hands of the patient. The "Primer" should admirably serve its intended purpose as a guide for the patient and in additon can be consulted with benefit by the average physician.

That diabetic patients, as a class, do not receive the scientific care and attention to which they are en-

(*Continued on page xiv*)

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ADDRESS

OBSCURE FORMS OF POSTERIOR UVEITIS; THEIR RELATION TO SINUS DISEASE AND ESPECIALLY THE LESSONS TO BE LEARNED THEREFROM*

LUTHER C. PETER, A.M., M.D.

PHILADELPHIA

In casting about for a suitable theme upon which to address you briefly at the opening of this session, the symposium on sinus disease suggested a phase of this interesting subject which might be apropos. Without anticipating the thoughts which may be brought out by the various discussions I have selected "Obscure Forms of Posterior Uveitis; Their Relation to Sinus Disease and Especially the Lessons to be Learned Therefrom."

It is unnecessary to emphasize the very intimate relation which exists between a pathologic eye and sinus disease. The avenues by which the visual pathway may become involved are well known. The paths through which toxemias may be carried are also matters of general knowledge. The difficulty lies in establishing a cause and effect relation between sinus disease and the toxemia as manifested in uveitis. It is difficult at best to determine the etiologic factor in many forms of posterior uveitis. In certain types of obscure recurring attacks of inflammation of the uveal tract, the ophthalmologist is frequently nonplussed and at times he feels almost hopelessly baffled in arriving at a correct conclusion as to the cause.

The citation of a case, which has worried the writer for three or four years past, will help to crystallize the thought in mind. The patient is a young man thirty-five years of age, who has had recurring attacks of uveitis alternating between his two eyes. In careful studies which have been made, the Wassermann has been found negative, teeth and tonsils have been eliminated and a physical examination, which on first report yielded negative results, finally uncovered an old tuberculous process at the apex of the right lung. X-ray examination confirmed the lung findings and also revealed a clouding of the right sphenoid and posterior ethmoid areas. Rhinologic studies by two capable specialists failed to discover any evidence of sinus involvement although a turbinectomy was performed in each naris. The several attacks responded slowly but not completely to tuberculin treatment. An overdose of tuberculin, administered by an assistant by mistake, was followed promptly by a marked constitutional and a rather disturbing focal reaction in the eyes. This confirmed the original diagnosis, but why was recovery not complete under tuberculin treatment? The diagnosis was strengthened by the chest findings and repeated x-ray examination of the sinuses seemed to furnish evidence that the toxemia might be lodged in the sinuses. Finally the invasion of the left macula with a semilunar cutting of the upper outer part of the left field gradually extending towards the center of the field until central vision had entirely disappeared, gave unmistakable evidence of a localized field of pathology in the neighborhood of the left optic nerve. Notwithstanding the two negative reports from two rhinologists, the patient was referred to a third for study. This examination revealed well advanced disease of both sphenoid and posterior ethmoid groups with apparent occlusion of the ostia. Operation confirmed the diagnosis. Right and left groups were found to be the seat of advanced and chronic disease. After three years of study and treatment the cause was found; but at what a price to the patient from both a financial standpoint and that of damaged vision!

The first practical lesson which may be drawn from this, and many other cases not unlike it in character, as Edgar S. Thomson has pointed out recently in the *American Journal of Ophthalmology* (Vol. IV, No. 7, page 507), is the fact that sinus disease should be seriously considered as an etiologic factor in all cases of obscure uveitis. More than ordinary routine methods of examination should be employed. The case should be studied most thoroughly from this standpoint by one who has the knowledge and courage to explore when circumstantial evidence is sufficiently strong to warrant exhaustive study.

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*The Chairman's Address, delivered before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

The second thought is one which has not been dwelt upon extensively so far as the writer knows. At the meeting of the American Academy of Ophthalmology and Otolaryngology in Denver in 1917, Major W. H. Luedde, of Colorado Springs, in discussing a paper by the writer on the use of tuberculin, cited a series of eye conditions of tubercular origin which failed to respond to tuberculin treatment until the posterior groups of cells had been thoroughly opened and drained. After this process, as a rule, response to tuberculin in his hands was prompt and recovery followed.

There are many who fail to find tuberculin of dependable value in posterior or intraocular disease of tuberculous origin. The question naturally arises, may not the sinuses harbor and intensify the toxins in some of these cases and be the cause of unsatisfactory results in treatment? In the paper previously referred to, Thomson says of obscure cases of uveitis, "The posterior ethmoids and the sphenoids must be well opened and good drainage established. To the rhinologist it seems as if he were operating on normal tissues. No pus nor exudation is found and no evidence of sinus disease. Soon after operation, however, the ocular condition shows signs of improvement." This was the experience of Major Luedde. The opening of these cells and the establishing of good drainage seems not to be attended by serious risk, if performed by one who is familiar with the regional anatomy of these cells. It is not unlikely that the sinuses are responsible for the harboring, not only of tuberculous toxins but of others as well, without marked or gross evidence of sinus pathology. It is a logical conclusion, therefore, in obscure cases of uveal disease or in cases in which the cause may be evident but the response to treatment unsatisfactory, that exploration and drainage of the sinuses should at least be given due consideration.

One could continue indefinitely to discuss the many thoughts which arise from the study of this or other interesting cases. The third or last thought, however, which I wish to leave with you is one which is much emphasized but which I fear is not practiced as it should be, namely, the necessity of team work in the management of sinus diseases. The greatest efficiency of surgery in abdominal and chest conditions is only made possible by coöperation with the internist. The neurologist is a *sine qua non* in brain surgery. To no less a degree is the ophthalmologist an aid to the rhinologist in disease of the sinuses. Even though sinus disease is patent to the rhinologist, operative interference is no more justified without an ophthalmological study than is the brain surgeon justified in operating upon a brain tumor without the counsel of neurologist. On the other hand many obscure conditions can be fathomed only by the combined and exhaustive study of both. Without fear, therefore, of laying too much stress upon what would seem to be a thoroughly understood and oft repeated lesson, the writer ventures once again to insist that sinus disease is in "no man's land" and that it can be explored and reclaimed only by the hearty coöperation of rhinologist and ophthalmologist.

ORIGINAL ARTICLES

PRIMARY THROMBOSIS OF THE PULMONARY ARTERY*†

FREDERICK T. BILLINGS, M.D.
PITTSBURGH

Clotting of the circulating blood during life is not an uncommon occurrence, and the causes leading to it are fairly well known, but there are many instances in which we do not appreciate its etiology, and find it difficult or impossible to assign a satisfactory reason. Trauma, injury to the vessel wall, slowing of the blood current, lowered blood pressure, viscosity or some chemical condition of the blood, bacterial infection and their products, all these are said to have a bearing upon the formation of thrombi.

Many believe injury to the vessel wall an important factor. Aschoff, for example, contends (Beitrag zur Thrombose Frage, Leipzig, 1912, also Arch. Int. Med. 1913 XII-503) that the thrombi are produced by some mechanical condition, slowing of the blood stream, and that the organisms found in them are brought there after the thrombi are formed. MacCallum writes, (Text Book of Path. 1916 pg. 7) that injury to the vessel wall results in thrombi formation. If this is not severe the clot may take some time in forming, but if the vessel is crushed there is rapid formation. It is possible that mere damage of the vessel wall, or even a slowing of the blood stream, will not of themselves produce a clot. Experimental work seems to have shown, at least from the standpoint of surgery, (Thrombosis & Embolism, Angus McLean, Surgery, Gynecology & Obstetrics, April 1915, pg. 457) that endothelial damage or trauma is not of itself a cause for thrombosis. Slowing of the blood stream is contributory, but infection and necrosis, with their products in the circulating blood, are the most important factors in the production of thrombi. Aschoff describes three other forms: Agglutination thrombi, which occurs in capillaries, such as those in the glomeruli of the kidneys, and are really formless masses of agglutinated red cells. Precipitation thrombi, which are produced in the capillaries of exposed tissue, for example the mucosa of the stomach, by strong chemical poisons, which coagulate or precipitate the whole protein rich blood. Finally, thrombi which are produced from the debris of red corpuscles and other cells, appearing in quantity after some hemolytic process.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

†From the 2nd Medical Clinic, Western Pennsylvania Hospital.

Many infections show a tendency toward clotting of the blood, pneumonia, typhoid fever, and that well known complication of the puerperal state, phlegmasia alba dolens. On the other hand, we recognize conditions in which the clotting is brought about slowly, for example hemophilia, and icterus.

The theory of clotting of the blood has been investigated extensively, particularly by Alex. Schmidt, Arthens, Hammersten, Fuld, Spiro, Loeb, and Morawitz. The latter has stated clearly that in the process of clotting there is an elaboration of the following steps: Thrombin plus fibrinogen, occuring in the blood plasma, produces the clot. Thrombin, evidently related to the enzymes, is the result of the combination of thrombokinase, derived from the formed elements of the blood, cells, etc., and prothrombin of the plasma, in the presence of calcium. There has also been shown to exist in the blood plasma a substance, antithrombin, which neutralizes whatever small amounts of thrombokinase may be liberated in the circulating blood.

One of the most interesting contributions to this subject is that of W. H. Howell (Conditions of the Blood in Hemophillia, Thrombosis, & Purpura, Archives of Internal Med. Jan. 14, Vol. XIII, pg. 76-95) who, investigating the cause of hemophilia, also included several cases of thrombosis, in which the etiology was obscure or unrecognized. He concludes that in patients suffering from a spontaneous thrombosis of the veins, there is evidence of a diminution of the antithrombin of the blood, the prothrombin being normal. It is suggested that this deficiency in antithrombin operated as a favoring factor, perhaps as a determining one, in the production of the thrombus.

In many instances it is absolutely impossible to explain the etiology of thrombi formation. Conner has shown, (Lewis A. Connor, Arch. Int. Med., March 1914, Vol. XIII pg. 349-360) that latent thrombi, which for a variable period of time remain undiscovered, may result in the production of disasterous emboli. Thrombi may be formed in any part of the circulatory apparatus. In arteries they may occur under varying conditions, those of the coronary being particularly interesting, not only because of the immediate danger to life, but also because many of the subjective symptoms may be entirely extracardial. It is in the veins however, that the formation of thrombi are most common. In certain localities they are extremely frequent, being however comparatively rare in those vital portions of the body whose disorganization endanger or abruptly terminate life.

In the pulmonary circulatory system, we have a condition of affairs which particularly favors the lodgement of emboli in the terminal vessels. As a matter of fact this condition is of common occurrence, and clinically the subjective and objective symptoms are classical, whether the invader be large or small, leading to a quick death, or a more favorable outcome. In the immediate neighborhood and practically surrounding these emboli, we find large or small thrombi, and it must be confessed, frequently it is nearly if not quite impossible, to find the original emboli.

It is interesting and curious that primary thrombi are not more frequently encountered, relatively speaking, in an organ which is so often exposed to insults and injuries from the various types of infections. This is emphatically so in pneumonia, in which the blood clots easily and rapidly, but primary thrombosis of the pulmonary arteries in this condition is an extremely rare finding and is seldom discovered at the postmortem. The pathologists and clinicians are certainly not in accord concerning it, and there is diversity of opinion, to say the least. We must however look to the pathologist, as the one to furnish us with conclusive evidence.

According to Cattell (Postmortem Pathology, pg. 163) "pulmonary thrombosis may arise from an embolus, engorgement of the capillaries, or disease of the pulmonary arteries, and it is not an infrequent complication of pneumonia and tumors, and often occurs in cases of atheroma of the pulmonary artery." In a personal communication from the pathological department of one of the largest hospitals in Chicago, it is stated that primary thrombosis of the pulmonary arteries, independent of embolus, is encountered not infrequently in their postmortem work. The condition is met with most commonly, according to their records, in terminal cases of cardiac decompensation and in the presence of large collections of fluid in the thoracic cavities. They also find syphilitic aortitis very commonly present.

Some years ago an article appeared in the "*St. Paul Medical Journal,* (Thrombosis of the Pulmonary Artery, With Report of a Case, Chas. E. Smith Jr.,—" St. Paul Med. Jr., St. Paul, Minn., Vol. XV, No. 10) in which the author leads one to believe that the condition is not rare, and quotes statistics, all surgical, to show that this is the case. As a matter of fact, however, in these records thrombosis and embolism are combined, so that they are not of value concerning the true incidence of spontaneous thrombosis of the pulmonary artery.

Balfour has suggested (Collected Papers of the Mayo Clinic, IX, 1917, pg. 321) that in certain cases of splenomegalie, thrombophlebitis of the splenic and portal veins occurs as a primary entity, and that it is associated with a rather definite picture. So also it is quite proper to imagine that spontaneous or primary thrombosis of the pulmonary artery has a definite pathology and symptom complex. It, however, generally accompanies an extremely serious primary condition, and its clinical interpretation, because of this factor, is uncertain and difficult.

It may easily be assumed that a weakened and diseased heart, cannot help but influence the blood current, and it is also evident that after operative procedures and childbirth, emboli thrown into the circulation, are not at all uncommon, therefore in the literature it is difficult to separate primary thrombosis of the pulmonary artery and embolism. As has been shown, the frequency of the former has been variously estimated. In reviewing this subject, one is struck by the paucity of definite records dealing with the condition. Most authors do not mention the subject at any length, and speak of mitral stenosis, less often of regurgitation, and also myocardial disease as predisposing to it.

The patients may have attacks of blood spitting, sometimes with sharp localized pains in the chest, which of course may be ascribed to infarction, the result either of embolism or thrombosis. Deaths resulting from diseases of the mycardium and valves, or from general cardiovascular decompensation, are relatively frequent. Postmortem findings of aortitis, large collections of fluid in the thoracic cavities, varied pathological states of the lungs, are found in the majority of cases examined by the pathologist, but primary thrombi of the pulmonary arteries are not. Organization is proof positive that clots have been in situ some time. Nearly all the cases of primary thrombosis of the pulmonary artery, have been reported from the surgical literature, and it is surprising that so little has appeared from the standpoint of internal medicine.

Among the autopsy records of the largest hospitals in Pittsburgh, the following are the findings regarding spontaneous (probable) thrombosis of the pulmonary artery. At the Western Pennsylvania Hospital, among approximately 400 autopsies, there were four cases of spontaneous pulmonary thrombosis. At the Allegheny General Hospital in a series of 300 autopsies performed, there were five which showed no evidence of endocarditis, or of thrombi in distant veins. In nearly 1,000 post mortems held at the Mercy Hospital, or at other hospitals connected with the University of Pittsburgh, two cases of primary pulmonary thrombosis, are recorded. We find therefore, from a series of 1,700 autopsies, there are eleven cases of probable spontaneous thrombosis of the pulmonary artery. Particular care was exercised in selecting these cases in order to discard those in which there would appear to be a preceding embolus. Two, however, were included which do not in the strict sense fall in the class we are discussing. Both of these showed a tendency toward systemic clotting, but also large organized, laminated, and pigmented thrombi in the pulmonary arteries, which I am convinced were spontaneous or primary. From the autopsy records I have been able to collect, it is certainly uncommon.

In a recent letter from the Pathological Department of the Massachusetts General Hospital, August third of this year, Dr. Oscar Richardson writes, that in a series of 4500 autopsies to date, there were three cases which seem fairly definite. Two others, in which pulmonary thrombi were found, were probably primary, so that in these records we have only five cases. Therefore, from the 6200 autopsies here reported it has been possible to collect 16 cases of primary thrombosis of the pulmonary artery, an incidence of .26%.

The following four cases from the clinical records of the Western Pennsylvania Hospital, are reported in detail.

CASE NO. I

W. M. was admitted to the West Penn Hospital April, 1920. He was a colored man, between 50 and 60 years of age, and gave a history of being sick ten days before applying to the hospital. He did not think he was very sick, but was tired and believed he would be all right in a few days.

Chief Complaints. Definite weakness and loss of muscular strength, twitching of the abdominal and thoracic muscles. There was also more or less complaint over the right chest, and moderate intermittent headache.

History of Present Illness. Up to ten days ago, the patient considered himself to be in good health. At that time he was bothered by a feeling of drowsiness, and also of weakness, but in spite of this drowsiness he did not sleep very well at night. He was bothered a great deal by involuntary twitching of the abdominal and chest muscles. There were more or less fleeting pains over the chest and extremities. Headache was at times severe. The vision was somewhat blùrred, but there was no complaint of diplopia.

Previous Illness. Had the usual childrens diseases. Had pneumonia some ten years ago. Aside from this he does not remember being sick.

Social History. He is about 60 years of age, does not know exactly. He has never married. Has been a moderate drinker. Denies venereal history. His work is that of a mill worker, and he has been able to save a few thousand dollars.

Family History. Unimportant.

PHYSICAL EXAMINATION

Appearance. A fairly well nourished elderly colored man, weighs about 115 to 120 pounds.

Skin. There is very little subcutaneous fat. There are some marks of old burns on the tibial surfaces.

Bones, Joints & Extremities. Fairly well muscled, there is no evidence of edema. There are no joint or bone deformities, and no joint tenderness.

Superficial Veins and Arteries. Negative.

Glands. There is a definite adenitis. Cervicle, axillary, epitrochlear, and inguinal all enlarged.

Head & Neck. There is no edema of face or neck. *Eyes* react to light and accommodation, but the pupils are unequal. *Tongue* moist and coated, breath foul. *Teeth* are in bad condition and infected. *Pharynx and Tonsils* red and congested. *Thyroid* cannot be palpated.

Chest. This is fairly well formed, and somewhat elongated. Respiratory excursions on both sides are equal. Clonic fibrilatory twitchings of the intercostal muscles are marked and particularly so when tapped.

Lungs. There is a somewhat dull tympany over both lungs, particularly over both lower lobes, and in this portion a moderate number of sibilant rales may be heard. Breath sounds are rather diminished over the entire chest, and the expiration is prolonged

Cardiovascular. Apex beat fairly well seen in the 5th interspace 4 inches from the midsternal line. There is no thrill. The right border cannot be made out; the base is at the 3rd interspace. The heart sounds are of good quality—rythm is regular—rate about 90 per minute. There is a systolic murmur both at the base and apex; these murmurs are not transmitted. There is no accentuation of the second sound. Blood pressure 120-70.

Abdomen. This is somewhat retracted, and rather rigid. The patient complains somewhat of a slight tenderness all over, probably muscular. There are the same fibrillary twitchings of the muscles as are observed in the thorax. This is more upon the right side than upon the left. *Liver.* The organ extends from the 6th rib and is not palpable at its lower edge. *Spleen.* This organ is not palpable.

Reflexes. Positive Babinski on both sides. Exaggerated patellar reflexes. Koenig is negative. Neck is not stiff. Superficial reflexes exaggerated.

Genito-Urinary. Negative.

Temperature, Pulse, Respiration. 99 2-5—90—20.

Laboratory Findings. *Blood Wasserman* at first doubtful, later negative. Three *spinal punctures* showed negative Wasserman positive globulin, slight increase in the cell count. *Gold sol* curve appeared in the taboparetic zone, but became gradually less after each subsequent puncture. *Urinalysis* Urine at times clear, at others moderate amount of albumen. A few casts. *Blood retention.* This was practically negative. *Blood examination* made at various times showed nothing of interest except a mild secondary anemia. This was accentuated in the last few weeks and was accompanied by a moderate leucocytosis.

Clinical Diagnosis. Encephalitis Lethargica. Chronic bronchitis. Pulmonary enphysema. Myocarditis.

Progress of the Case. This patient was in the hospital about three months before he died. For some time his symptoms remained about the same, and up to a week or ten days before death, he never appeared very ill. His most constant complaint was pain, particularly down the back and over the right side. The clonic contractions of the thoracic and abdominal muscles, although for certain periods much less severe, never entirely subsided. His temperature range was between 99 and 100, cardiac about 90 to 100. There were strong hopes for his recovery. About three weeks before his death pulmonary signs gradually became more prominent. The lungs never had completely cleared, but about this period coarse moist raies appeared, which became finer at the bases. The temperature was more sustained, and the cardiac rate increased. He developed a more pronounced cough, but there was never any blood in the sputum. A week previous to death he complained of marked dyspnea. This seemed to be extreme and he complained of it continously; it was difficult to account for. The cardiovascular condition remained about the same as on admission. The lungs although there were the physical signs of a broncho-pneumonia, did not seem to account for the extreme shortness of breath. He died suddenly on June 10th., 1920.

AUTOPSY

Anatomic Diagnosis. Thrombosis of both pulmonary arteries. Congestion and edema of both lungs. Acute pleurisy—left. Hydrothorax—bilateral. Infarction—left lung. Chronic endocarditis. Antemortem clot—right ventricle. Hydropericardium. Chronic passive congestion of abdominal viscera. Slight softening of cord.

Bacteriological Examination. Gram negative bacilli in both pericardial fluid and in heart's blood. Body is that of a well developed old colored man. Individual is bald headed. Old scar on posterior surface of right leg, extending from ankle to middle of calf. No other marks noticed on body. Subcutaneous tissues dry, fatty tissues firm and greyish white in color and rather friable.

Peritoneum smooth, moist. *Omentum* drawn up around the transverse colon.

Diaphragm reaches to 4th interspace right, and 5th left.

Thorax. Some fibrinous adhesions attach the posterior part of the left lung to the chest wall. About three hundred cubic centimeters of turbid fluid is present in the sack. No adhesions on the right side, but about 1500 c.c. clear fluid are present.

Cardia. *Percardium* contains about 100 c.c. of slightly turbid fluid. *Musculature* is soft, flabby and of a brick red color, but there is no hypertrophy.

Both *ventricules* appear slightly dilated. Base of *aorta* is smooth. *Heart* itself is soft and flabby. There is a large whitish patch on its anterior surface. The right side of the heart is filled with clotted blood—postmortem. At the very tip of the auricular appendix there is an antemortem clot, small. The tricuspid valve is slightly thickened along its edge, but seems competent. The *mitral valve* also shows some thickening along its edge, but is pliable. *Endocardium* of the left ventricle is thickened and shows a greyish white color, especially at the apex. Cusps of the aortic valve appear quite normal.

Lungs. *Left* is heavy and boggy. On lower portion of upper lobe is a triangular area, base outwards measuring 5 by 7 c.m. It is covered with a heavy fibrinous exudate and is quite firm. Section shows a granular surface. The edges of the lung show some emphysema. The lung is very dark, pigmented. An antemortem clot (thrombus) completely fills the left pulmonary artery before its bifurcation, and extends into its subdivisions. The thrombus is firm, friable and laminated. The extentions into the smaller vessels show a gradual shading off into the postmortem clot. Section of the lung substance shows a very edematous organ, which is deeply pigmented. *Right lung* is heavy, boggy and deeply pigmented. The pulmonary artery is filled with a thrombus just anterior to its bifurcation. The thrombus is attached to the vessel wall, firm, friable, and laminated. The extensions into the smaller vessels gradually shade off into postmortem clots. All branches of the vessel are filled. The thrombus on the posterior upper and lower sides of both pulmonary vessels, leaving the anterior side free. Considerable emphysema is present along the edges of the lobes.

Spleen. This organ is small, friable and on section shows a dark splenic tissue in which the trabeculæ and fibrous tissue is prominent. Capsule of the organ is torn somewhat on removal.

Kidneys. Left is surrounded by the remnants of a fatty capsule. Organ is firm, dark, the capsule strips readily leaving a smooth surface except for an occasional slight depression. Section of the tissue shows normal markings. Right kidney is similar in all respects to the left.

Liver. This is smooth, brown, with a slight yellowish tint. Consistency normal. Edges sharp. Section shows a mottled dark brown and greyish surface not unlike a nutmeg liver. It is congested.

Gall Bladder. This is full of a dark syrupy bile; ducts free.

Adrenals. Cortex thin, medulary part prominent.

Pancreas. Normal.

Stomach. This organ contains considerable thick mucus. Mucosa is dark colored and appears congested. It is thin and there are no ulcers.

Intestines. Normal.

Brain. Dura mater is firmly attached to the skull, so that it is torn in removing the bony cap. Section shows a normal brain substance. The choroid plexuses and the velum interpositum are attached more firmly than normal to the underlying tissue. The pituitary and pineal are normal. Cord: the upper part of the thoracic portion seems more soft than normal; otherwise negative.

CASE NO. 2

(The clinical history of this case must of necessity be brief. The patient was in the hospital less than 24 hours before death.)

E. A. K., age 60, admitted to the hospital Sept., 1914.

Chief Complaint. Dyspnea, and swelling of the extremities.

Present History. Shortness of breath, and swelling of extremities for the last three weeks. Since that time there has been marked dyspnea, which has become progressively worse. He went to bed and was up and down for a week before coming to the hospital. He coughed more or less and at times there was bloody expectoration. The edema began in the extremities, and gradually a general anasarca developed. The patient was delirous at times. History could not be obtained from him, but his friends were called upon.

Past History. This is very vague and brief, but it has been determined that he had suffered from headaches for years, generally worse at night. Three or four years ago he had a paralytic stroke, and not fully recovered the use of his right side.

Superficial Examination. Patient is an old appearing man, lying in bed in a semi-conscious condition. There is marked air hunger, and all the accessary muscles are employed. Respirations are in the neighborhood of 40 or 50 per minute. Temperature generally subnormal, pulse irregular, and ranging from 100 to 110. There is right sided hemiplegia of the flacid type. The conjunctiva is yellowish in color. Pupils are contracted. Cardiac action 110, and markedly irregular, apex in the 6th interspace, and to the left of the mid-clav. line. Lungs contain many coarse and fine moist rales, both sides lower lobes.

Sept. 6th, 1914. Patient died at 10 this morning of evident respiratory failure. Heart continued to beat for about two minutes after respirations ceased. Artificial respiration resorted to but without avail.

Clinical Diagnosis. Chronic interstitial nephritis. Uremia.

AUTOPSY

Anatomic Diagnosis. Chronic interstitial nephritis with congestion. Thrombosis of both pulmonary arteries. Hemorrhagic infarcts in both lungs. Congestion and edema of lungs. Antemortem clot in left ventricle. Hypertrophy and dilation of heart. Encephalomalacia left temporal lobe. Chronic passive congestion of abdominal viscera. Chronic fibrous pleurisy. Double hydrothorax. Edema of meninges. Ascites. Anasarca. Arteriosclerosis.

Body. Is that of an old, well developed and preserved white man. The lower extremities are edematous and the right is larger than the left. The left arm is quite large and on its posterior portion shows a large black area. An incision through the skin is present in the elbow where an intravenous has probably been given. The third and fourth fingers of the left hand are missing. The tissues are edematous.

Subcutaneous Fat. Is present in small amounts; tissues are very edematous; muscles are anemic.

Intestines. The peritoneum is smooth and shining; some increase of peritoneal fluid is present, which has a dark color. Organs seem normally placed. The diaphragm is a little low.

Thorax. A large increase of fluid is present in both pleural cavities. This is more pronounced on the right than on the left. The left lung is attached by fibrous adhesions at its basil and posterior portions.

Heart. The pericardial sac is very large; an increase of fluid is present. The heart is much hypertrophied and dilated. The right ventricle is filled with unclotted blood. The musculature is dark colored; trabeculæ are prominent. The tricuspid valve shows slight thickening at its margin. Pulmonary artery is quite normal. Section through it reveals a large antemortem clot situated in the apex and on the anterior and right sides. Beneath the clot there is considerable fibrosis of the endocardium and underlying muscle. The ventricular wall is slightly thicker than normal; the chamber is considerably larger than normal. The mitral valve appears quite normal, and the aortic cusps show some thickening and calcification at their bases. The base of the aorta reveals many atheromatous areas.

Lungs. The left lung is very dark colored; it crepitates for the most part, but in its basil portion and in the lateral part of the lower lobe firm areas are noticed. Section through these reveals a typical hemorrhagic infarction of the lung substance. An antemortem thrombosis is located in the pulmonary artery just as it breaks up into the various branches of the lung substance. Section through the rest of the lung shows a congested edematous tissue without any evidence of consolidation or tuberculosis. Bronchi are hyperemic and contain frothy fluid. Right lung is similar in color and consistency to the left. A similar thrombosis is found in the pulmonary artery, and similar areas are encountered in the lung substance. In fact the entire lower lobe is deeply congested and has the appearance of being almost an infarct. The rest of the lung substance is congested with slight edema.

Spleen. Is about normal in size, very dark colored and quite firm. Section reveals a dark splenic tissue which is firm and not easily scraped away.

Kidneys. The left kidney is small, surrounded by some perinephric fat. The capsule is thicker than normal, strips with some difficulty, and leaves a lobular surface beneath. This is very dark colored and very firm. Section shows the cortex thinner than normal. Pyramids are shortened. There is some increase of fat in the pelvis. The striations are prominent because of the intense congestion. Glomeruli appear as reddish dots. Ureters normal. Right kidney is similar in all respects to the left except that the congestion is not so marked.

Liver. Is rather small; surface is smooth with a brownish, slightly yellow tinge of color. Section cuts with resistence and shows a slight nutmeg appearance of mild degree. Considerable blood oozes from the cut surface.

Gall Bladder. Is filled with dark tenacious bile. Ducts patent.

Adrenals. Are brownish in color, rather friable.

Pancreas. Appears normal.

Stomach. Is small; contains some dark colored fluid. Mucosa is thrown into folds, and has hyperemic appearance. No ulcers are noticed.

Intestines. Are normal.

Mesentery Glands. Are slightly enlarged.

Urinary Bladder. Contains a small amount of dark colored urine. Otherwise normal.

Brain. Shows considerable edema of meninges. No hemorrhages noticed. In the left hemisphere, involving the middle portion of the superior temporal limb of the temporal lobe and the anterior portion of the inferior parietal limb of the interparietal lobe, there has been a softening with absorbtion of the brain substance—only the meninges remain. The softened tract extends inward toward the left ventricle and measures, roughly, 1 cmm. in depth by 2 cm. in width. The external capsule with the external portion of the lenticular nucleus is involved. The degeneration extends backward in gradually diminishing volume through the central portion (white matter) of the parietal lobe and enters the occipital for a short distance. Three other minute softened areas are noticed on the surface of the brain surrounding the large area. The blood vessels at the base of the brain show considerable arteriosclerosis and a branch of the middle cerebellar at the edge of the degenerated area seems to be occluded by endarteritis. Section shows it to be occluded.

Other organs not examined.

CASE NO. 3

F. K. admitted to the hospital April 30th 1915.

Chief Complaint. Shortness of breath and swelling of legs and abdomen.

Present History. Four weeks ago patient began to complain of pain in the abdomen, and slight swelling of the abdomen and ankles. She was in bed for a few days, then got up but was compelled to return to bed. She became more and more dyspneic and swollen, also developing a cough, which she thinks was due to some irritation in the windpipe. There is often swelling under the eyes in the morning, and she thinks she passes more than the usual amount of urine.

Past History. General health has always been good. Never suffered from shortness of breath or swelling of the extremities before. Two months before the onset of the present illness, was delivered, under "twilight sleep" of a normal, healthy child. Friends think the patient has never been as well since this event, although the post-mortem history appears to have been normal, and patient was up and about in the usual time following a normal delivery.

Examination. In *appearance* the patient is pale and pasty. There is no *cyanosis.* There is a general edema of the *skin,* all the *extremities* are edematous, there is no *ascites. Liver* is not palpable, although there is some tenderness in the right hypochondrium. The *spleen* is not palpable. *Lungs*—the patient is continually coughing up blood-tinged mucus. There is dullness at both bases, back, and the breath sounds over these areas are high pitched and prolonged. There are also many fine and coarse moist rales scattered over both pulmonary areas in the back, particularly over the right side. The respirations are much increased in frequency, and the patient is particularly distressed because of this fact. *Cardiovascular.* There is a diffused cardiac impulse over the chest to the left of the sternum, but not to the right. This pulsation is particularly noticeable in the 6th interspace, about 5 inches from the midsternal line. In this area there is marked tenderness on palpation. Left border about 5 inches from the midsternal line. Cannot outline right border. At apex is heard a prolonged, rough, presystolic murmur. There is also a soft blowing systolic murmur heard best over the base, left. Blood pressure—systolic 130, diastolic 60.

Progress of the Case. This patient was in the hospital less than 2 weeks before she died. From the first she seemed extremely ill. The quantity of urine gradually lessened in amount, and contained albumin and many casts. The blood examination showed a slight secondary anemia, with the w.b.c. about 15,000. As the case proceeded there was more or less vomiting and abdominal distress which necessitated the discontinuance of the medication. The swelling in extremities has remained about the same. Patient continually coughs up blood stained mucus. The chest findings are about the same as when first examined, although the moist rales at the bases have undoubtedly increased.

Dyspnea is marked. The respirations are between 50 and 60 a minute, sometimes even exceeding this rate. During the last week it was possible to demonstrate that the right side of the heart was some 3 inches from the midsternal line. The patient died on May 12, 1915.

Clinical Diagnosis. Acute nephritis. Chronic myocarditis.

AUTOPSY

Anatomic Diagnosis. Chronic hypertrophy and dilation of the heart. Acute nephritis. Chronic passive congestion of abdominal viscera. Congestion and edema of lungs. Hemorrhagic infarcts of right lung. Chronic fibrous pleurisy of right lung. Thrombosis of vessels of right lung. Edema of extremities. Hypoplasia of aorta. The body is that of a well developed and well nourished young white woman. The lower extremities are markedly edematous. The right arm is also very edematous. The skin between the shoulder blades, and over the upper part of the back shows numerous petechial hemorrhages, these extend up into the neck and occiput. No abrasions are noticed over the body.

Subcutaneous Fat. This is present in slight amounts, of a deep yellow color. *Tissues* are moist. Muscles are a brick red in color.

Peritoneal Cavity. Peritoneum is smooth and of a greyish color. Intestines are normally placed and there is no increase of fluid.

Thorax. The left lung is free, the right is bound by numerous fibrous adhesions on its posterior and lateral aspects. The mediastinum contains considerable fatty tissue which is very moist.

Heart. The pericardium is enlarged, extending over to the left beyond the nipple line. It is smooth and shiny and contains an excess of fluid. The *heart* is considerably enlarged, especially to the left. The musculature is of a brick red color. The papillary muscles and trabeculæ are rather prominent. The thickness of the left ventricle is slightly increased, and its cavity is markedly increased. The valves are smooth and pliable with no thickenings. The base of the aorta is smaller than normal and smooth. The aorta itself is considerably smaller than normal, hypoplastic condition being present.

Lungs. *Left* lung is collapsed and crepitates throughout, its surface is smooth, considerable pigment is present. Section shows the lung substance to be somewhat congested and edematous. The *right* lung is more voluminous and its lower part is covered partly with fibrous tags. Numerous firm nodules are recognized in its substance. Section shows numerous hemorrhagic infarcts through the lower lobe, and the posterior part of the upper lobe. On section many of the vessels are occluded by thrombi. The middle portion of the lower lobe is necrotic, with slight gangrenous odor.

Spleen. It is of normal size, surface smooth and dark colored. The organ is rather firm and section shows a dark splenic substance in which the normal markings are practically obliterated.

Kidneys. The *left* kidney is surrounded by a small amount of perinephretic fat. The organ is rather firm, the capsule slips off easily, is thin, and leaves a smooth surface beneath. Section shows the cortex to be slightly thicker than normal and a reddish grey in color, and the normal markings to be entirely obliterated. Its cut edge is slightly rounded. The pyramids are beefy red in color. The pelvis is a little larger than normal, and the ureter is normal. The *right* kidney is similiar in every respect to the left.

Liver. This organ is slightly larger than normal. Its surface is smooth and brownish yellow in color, and the edges rounded. Section shows a typical nutmeg appearance. One small angioma is noticed on the surface.

Gall Bladder. Contains a small amount of thick syrupy bile, ducts patent.

Adrenals. Are rather firm and appear quite normal.

Pancreas. Is very firm with numerous yellowish and greyish areas occuring on its surface, and a few in its substance. These vary in size, usually measuring from one to three millimeters in diameter. They are rather flat and appear like caseaus material. Otherwise the organ appears quite normal.

Stomach. Contains a small amount of dark colored material, which contains some blood. The mucosa is thrown into slight folds and numerous petechial hemorrhages are scattered over its surface.

Intestines. The duodenum contains a few petechial hemorrhages, and the mucosa throughout is thrown into slight folds and numerous petechial hemorrhages are scattered over its surface, as in the stomach.

Uterus. This is small. The mucosa is hemorrhagic but otherwise normal.

Ovaries. These contain numerous cysts.

MICROSCOPIC

Kidney. Edema in places, Glomeruli congested and detritis in Bowman's capsule. Proximal convoluted tubules show degeneration of epithelium and detritis in tubes. No leucocytic infiltration.

Pancreas. This shows an old pancreatitis with fatty necrosis. Islands of Langerhans very prominent, adenomata.

Liver. Pressure atrophy marked. Liver cells around central veins are all destroyed.

Heart. The muscle fibres are enlarged and prominent, fibrils easily recognized on cross section.

CASE NO. 4

G. B. K. admitted to the West Penn Hospital Feb., 2. 1920. He was a white man between 50 and 60 years old, a machinist by trade.

Chief Complaint. Marked shortness of breath, with great weakness. Complains also of sleeplessness. He has been spitting up a small amount of blood.

History of Present Illness. About six weeks ago patient's thumb became injured and infected. He was treated in this hospital, eventually the right thumb was amputated at the first joint. He was discharged about four weeks ago, returning from time to time for dressings. The patient had weakness and shortness of breath six or seven months before thumb became infected, and had a slight cough during that period. He has lost some weight. During the last four or five weeks the shortness of breath has become more evident, particularly at night. He is very nervous, and is easily startled. There is some cough and he spat up a small amount of blood a few days ago.

Previous Illness. Has had the usual childrens' diseases, typhoid fever 18 years ago, pneumonia 30 years ago. General health has been good up to the present history.

Social History and Habits. Patient's wife died some time ago of pneumonia. Nine children living and well; four died as children. Does not drink alcohol, uses tobacco moderately, denies venerial history.

Family History. Unimportant.

PHYSICAL EXAMINATION

Appearance. A thin emaciated white man about 60 years of age, about 5ft. 10 in. tall. There is a cachetic appearance.

Skin. Dry, and there is an absorption of subcutaneous fat, so that the skin is loose. The patient is pale.

Bones, Joints & Extremities. Poor muscular development. There are no joint or bone deformities and no joint tenderness. There is evidence of edema in both lower extremities.

Superficial Veins and Arteries. Negative.

Glands. Epitrochlear, axillary and inguinal enlarged.

Head and Neck. There is no edema of face or neck. *Eyes*—pupils small and react to light; conjunctiva is pale and slightly jaundiced. Tongue, moist, coated and pale. *Teeth*—they have all been removed, but the patient is not accustomed to using artificial teeth. *Pharnyx & tonsils* are negative. *Thyroid* is negative.

Chest. The chest wall is thin, interspaces are prominent. It is long and narrow. The respirations show short excursions, but equal on both sides. Infra and supra clavicular fossae marked. Both apices retracted.

Lungs. In front over both lungs there is a hyperresonant note. There are many fine crepitant and subcrepitant rales scattered over both lungs particularly at the bases. At the back there is impairment over the right apex, and a few scattered moist rales over the base. Over the left lower lobe impaired resonance, and many fine crackling rales.

Cardiovascular. Apex beat is found at the 6th interspace, 4¾ in. from midsternal line; left border 5 in. from midsternal line. No visible pulsations except as noted. The heart sounds are regular, but weak, particularly the first sound at the apex. There are no definite murmurs. Blood pressure 160—90.

Abdomen. This is retracted, there is a certain amount of rigidity over the right hypochondrium, and tenderness on pressure over the epigastrium. *Liver.* It is not palpable. *Spleen.* This organ is negative.

Genito-Urinary. Negative.

Temperature, Pulse, Respiration. 100 3/5—110—35.

Laboratory Findings. *Sputum* for T. B., numerous examinations negative. *Blood Wasserman,* positive. *Compl. fixation gonococcus* and *tuberculosis,* negative. *Blood* examination, R. B. C. = 4100000; Hb. = 70, W. B. C. = 16800. *Blood retention.* Nonprotein nitrogen = 56 m. g. Urea nitrogen = 25 m. g. Creatininine = 4 m. g. Uric acid = 5.5 m. g. Sugar = .164%. *Urine.* The amount passed during the night much increased over the day output. The 24 hour amount averaged between one and two quarts. Sp. Gr. 1.015 to 1.025, albumin was always present, usually a trace to a moderate amount, sugar always negative. Microscopic generally showed a few granular and hyaline casts.

Clinical Diagnosis. Myocarditis. Endocarditis. Cardiac hypertrophy. Consolidation of both lower lobes. Secondary anemia. Syphilis. Thrombus left supraclavicular vein.

Progress of Case. Rather complete bed-side notes were taken of this patient while in the hospital. He became progressively worse, the most prominent objective symptoms being those referable to the lungs and heart.

Feb. 8th. Heart sounds very weak and distant, no murmurs can be made out. Patient in more or less distress and complains of pain over the left side and shortness of breath. There are many crepitant and subcrepitant rales over both bases in back; and over the left impaired resonance and patches of bronchial and broncho-vescicular breathing. There is a loud rough friction rub over the left axillary area.

Feb. 11th. Marked impairment of resonance of left base, there are also many crepitant and subcrepitant rales, and definite bronchial breathing. There is a patch of consolidation at angle of left scapular about the size of the hand. There is noticed some fullness and swelling over the left supraclavicular region and shoulder.

The clinical signs of consolidation increased. A too and fro friction rub developed over the precordium. The heart sounds continued to be very poor. A thrombus was undoubtedly present in the left supraclavicular vein. There was marked edema of the shoulder and upper arm.

Feb. 15th. Electrocardiographs showed a left branch block, myocarditis. There is dyspnea and restlessness. Tongue and lips dry. There is pulsation over the right precordial region. Heart sounds are poor, the muscle element seems almost lacking. The heart appears to be enlarged to the right. There is a faint too and fro murmur. There is some suspicion of fluid in the pericardium.

Feb. 20th. Entire left lower lobe consolidated. Many small moist and subcrepitant rales at base of right lung. Heart sounds weak and distant. Cardiac border to the left much increased. Paracentesis of pericardium without result. Abdomen is flat and negative. There is marked and distressing dyspnea.

On the next day the patient became delirious. He rapidly became unconscious and died the morning of the twenty-second.

AUTOPSY

Anatomic Diagnosis. Acute suppurative pleurisy Chronic fibrous pleurisy. Chronic hypertrophy and dilation of the heart. Chronic myocarditis. Degeneration of the posterior papillary muscle. Chronic nephritis. Chronic endocarditis, mural, with antemortem thrombi. Thrombi of many vessels of left lung; also right. Infarct in upper pole of left kidney. Syphilitic arteritis. Emaciation. Chronic splenitis. Thrombus left external jugular vein.

Appearance. The body is that of a greatly emaciated, middle aged white man. Body is warm and rigor mortis absent. *Teeth* are missing. Slight abrasion of the skin over the sacrum. The *external jugular vein* just above the clavicle, left, feels hard like whip cord under the examining finger. *Subcutaneous fat* is absent. *Muscles* are brick red in color.

Peritoneal Cavity. The peritoneum is smooth, shiny and a small amount of fluid is present. Intestines are slightly distended with gas.

Thorax. Left pleural cavity contains turbid fluid which is slightly bloody. The left lung is pushed upward and is bound by adhesions to the chest wall. Right pleural cavity contains a small amount of fluid and the right lung is bound by adhesions to its apex and lateral surface, but more especially to its basal part where the organ is torn in attempting to remove it.

Heart. Pericardial sac is distended. Contains about a 100 c.c. of fluid, clear. The heart is greatly enlarged. The apex is greatly depressed. The musculature of the heart is quite firm, except in a few places to be noted later. The right ventricular wall is considerably hypertrophied. The papillary muscles and trabeculæ being prominent. The tricuspid valve shows a slight thickening of the cusps, but they are pliable and apparently competent. The left ventricular wall is greatly thickened, measuring some 3 c.m. in some places. The chamber is greatly dilated. The trabeculæ and papillary muscles are very prominent. The endocardium shows numerous fibrous thickening, especially on many of the trabeculæ at the apex. The posterior papillary muscles show a slight greyish-yellow discoloration, with areas of almost black. It is softer than the other papillary muscle. Section through the muscle bundle shows a softened degenerated papillary muscle. It is greyish yellow in color. There is another area of softening in the muscle near posterior coronary artery, and extending from the surface inward. The tissue is soft and has a parboiled appearance. The mitral valve is slightly thickened, but appears otherwise competent. Both auricles are considerably dilated with thickened walls. Aortic cusps show infiltration at their bases, but are pliable and appear competent. Both coronary arteries show atheroma and fibrosis, without however any apparent diminution of their lumen. Base of aorta shows marked atheroma and fibrosis, and the wall is thickened, but there is no calcification. Foramen ovale is closed.

Lungs. *Left Lung* is collapsed. Its upper lobe is covered with old fibrous adhesions, and its lower lobe is covered with old and more recent adhesions of an exudative character. The two lobes are bound together by dense adhesions. The lower part of the lower lobe shows a large hemorrhagic infarct. The upper part of this lobe is collapsed. Examination of the branches of the pulmonary artery, shows a thrombus in the artery leading to the lower part of the lower lobe. There is also a thrombus of one of the smaller arteries leading into the middle part of the upper lobe, and likewise a thrombus of one of the smaller arteries leading to the apex of the lung. This, however, seems to be of fairly recent origin as there is no inflammatory reaction of the tissue surrounding it. The apex of the lung is covered with dense fibrous tissue. The lung substance here is firm for the distance of 1 c.m., and is deeply pigmented. Section of the upper lobe of the lung shows edema and congestion with a markedly pigmented substance. The pleura is greatly thickened. The lung substance has a brownish color with a tense leathery feel. Peribronchials are slightly enlarged. Bronchi are hyperemic.

Right Lung is covered with dense fibrous adhesions, especially in the lower part, where it is firmly attached to the diaphragm and to the chest wall, necessitating the tearing of the organ when removing it. Considerable fibrous tissue covers the apex, and there is here a nodular area about the size of an English walnut. Section through this shows a deep pigmentation with an increase of fibrous tissue. A few minute cavities measuring 3-4 m.m. in diameter are present. No tubercles are recognized. The lung is heavy and boggy. Section shows the lower lobe to be congested and edematous. A thrombus is located in one of the lower arteries, but is probably of recent origin, as there is no identification of inflammatory reaction. All the lobes are bound together by adhesions. Peribronchial glands are slightly enlarged and pigmented. Bronchi hyperemic.

Spleen. This organ is normal in size, dark colored and firm. Its capsule is thickened and slightly rough. Section shows a dark splenic pulp in which normal markings are partially obliterated. Blood vessels and trabeculæ present and prominent. No infarct recognizable.

Kidneys. *The left* measures ·11 x 5 x 4 c.m. It is very firm and capsule is removed with difficulty. Many minute cysts are noticed on its surface, which is quite smooth. The fatty capsule is firmly attached to upper pole of the kidney. Section shows a dark beefy organ in which the blood vessels are quite prominent. Cortex is slightly thinner than normal. The hilum of the kidney is more prominent and contains some fat. Examination of the upper pole shows one of the vessels to be thrombosed, producing an infarction of the kidney. Part of the tissue is greyish and softer than normal. Surrounding this is a thin dark rim of tissue. *The right* kidney is a little larger than the left and, aside from the infarction, is similar.

Liver. This organ is smaller than normal. Surface is smooth and edges sharp. Over the anterior edge there is a thickening of its capsule due to pressure on the costal margin. Section shows the lobulations distinctly.

Gall Bladder. This organ appears normal, ducts are free.

Adrenals. Cortex is very yellow. Chromafin appears to be diminished.

Pancreas. This is normal.

Stomach & Intestines. Stomach contains a small amount of undigestible fluid material. Mucosa is hyperemic and thrown into folds. No ulcers.

Urinary Bladder. The bladder contains a small amount of urine. The mucosa is normal.

Blood Vessels. The aorta shows throughout its extent numerous yellowish and fibrous patches. In fact the entire arterial wall is apparently involved. It is more prominent however in the arch of the aorta and just above its bifurcation. Many linear and parallel lines are noticed in the arch and its lower portion. The blood vessels of the abdominal aorta are very prominent, which is especially true of those in the mesentery and the splenic artery.

Of the 16 cases reported, four only are recorded in detail. Of these, although one gives evidence of systemic clotting, there is little doubt that the pulmonary thrombi are of spontaneous or primary formation. It of course suggests the possibility of pulmonary embolism as responsible for the clot. This, however, would not account for the wide spread thrombi in the pulmonary circulation.

The clinical interpretation of primary thrombosis of the pulmonary arteries is of great interest. Probably it generally accompanies grave underlying conditions, so that it may be easily overlooked, or, on the other hand, possibly, rarely appears as the most prominent factor, and is associated with a definite clinical picture. That some of these patients recover is probable.

Lately my attention has been called to a case of irregular pulmonary findings of slow onset, suspicious of small areas of consolidation, with rather general bronchitis, some pain over the side involved, a moderate amount of plural fluid, slight cyanosis, and subjective symptoms of the most urgent dyspnea, out of all proportion to the physical findings. It is true there were also signs of an old definite carditis, but not of decompensation. Up to a certain point the illness was slowly progressive, after which it as gradually subsided. The most outstanding feature of the condition is shortness of breath. All the patients presented these symptoms to a marked degree, and this dyspnea is difficult to account for from the usual causes. It gradually appears, for there is not the sudden dramatic shock as observed after the plugging of a large pulmonary vessel by an embolus. Pain and general discomfort may not be particularly noticeable. There are symptoms of pulmonary involvement, generally of a bronchopneumonic type, patches of consolidation, with an accompanying fine or coarse bronchitis, possibly a moderate amount of clear or blood stained pleural fluid following a friction rub.

There may or may not be blood stained sputum. Generally a diagnosis is made of bronchopneumonia, pleurisy embolism, depending in large part upon the classical picture, and the suddeness of the onset. There may be but few symptoms, because the occurrence has been so gradual that but little is observed, or on the other hand death may be so sudden that few abnormalities have had time to appear. Usually the cardiac apparatus does not appear to suffer much change, until toward the end, although the rate gradually or more rapidly increases. The symptoms may be masked because of their irregularity. This clotting may have been going on for some time, giving no signs, because a gradual obliteration of many branches of the pulmonary artery is less apt to give evidence of its presence than a sudden occlusion of one small branch.

As a matter of fact, pulmonary thrombosis, when established, progresses more or less rapidly, but the onset as a rule is not sudden. There appears a time, after its formation, when effort or sudden movement requires a larger amount of oxidation in the lung than is mechanically possible, because of the obliteration of part of the pulmonary circulation. There is an impossible amount of work thrown upon the right heart, resulting in dilation, and also engorgement of the upper and lower great venous trunks. The resulting circulatory disturbance produces the most serious consequences.

That bacterial infection is wholly responsible for the formation or appearance of clots in the circulation, is open to question. Endothelial changes, trauma, slowing of the blood current, all have their influence upon this tendency, but it is possible that infection bacteremia is the most important single factor causing the forming of thrombi. Injury to the vessel wall, particularly destruction of the endothelium, may be produced either by bacteria or toxins, and could well cause thrombosis, on account of the mechanical effect and the setting free of thrombokinase. Possibly the changes which lead to thrombus formation are not the same in all instances. The relation of infections to thrombosis has of late years been strongly emphasized. In case No. 1 this has been definitely shown. Unfortunately, in the others either the cultures were not taken, or the procedure is not mentioned in the records. However this may be, it is well known that blood cultures may be negative at numerous examinations and positive at others. Both in typhoid and pneumonia, essentially bacteremias, systemic clotting of the blood is common.

It is believed in the cases mentioned, all autopsied, present those of spontaneous or primary thrombi in the pulmonary arteries, independent of other influences in the cardiovascular apparatus. The summary of the evidence from the pathological point of view in favor of primary thrombosis is that there is no systemic clotting. There is separation of the clots from one another and stratification of the thrombus, also the absence of encapsulated emboli, and the presence of laminated and organized thrombi.

626 Union Arcade.

SOME THOUGHTS ON FRACTURED LONG BONES; THEIR REPLACEMENT AND TREATMENT*

HARVEY C. MASLAND, M.D.

PHILADELPHIA

Diversity of opinion with regard to the treatment of abnormal conditions is an indication that no one plan of treatment gives perfect satisfaction. This is manifest in the present confusion regarding the treatment of fractures of the major long bones. At the last meeting of the American Medical Association, we witnessed a range of opinion from prayer and expectancy to the most radical procedures. True this applied to fractures under different conditions but that such a pessimism should exist, in my judgment, is only an indication that we have failed to grasp a full knowledge of the possibilities of the situation. There is nowhere in the physician's art a more urgent need for the application of mechanics adaptable to human capacities and needs. He who is unwilling to apply himself or professes flippantly his ignorance of mechanics should leave these matters to other hands. The x-ray pictures of any considerable hospital offer a sad commentary on the truth of this statement.

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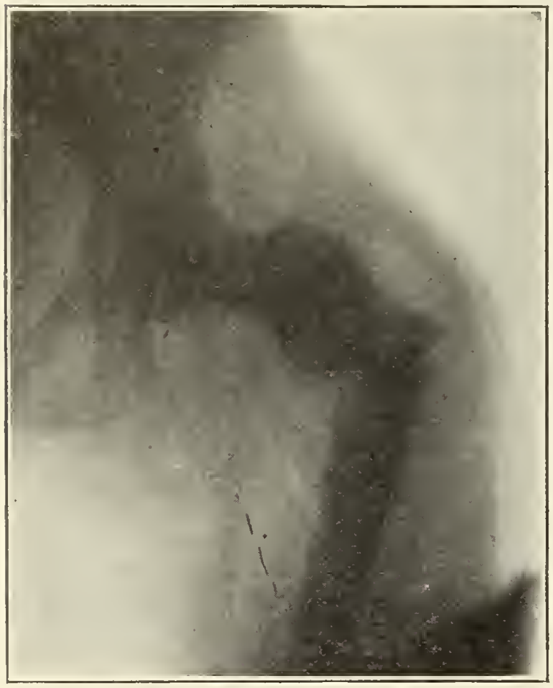
*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

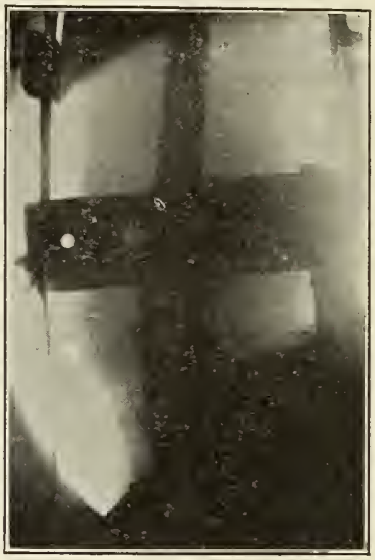
FRACTURE DEFORMITY

One reason for the lack of advance that is evident is because we have accepted in our college youth the tradition concerning the causation and cure of fracture deformity and dared not be heretical enough to question what had the sanctity of age. For our purpose we need consider but three varieties of tissue in connection with fractures of the long bones. These are bone, fibrous tissue and muscle. While we speak of the bone as the hard skeleton of the body, with equal truth we can call the connective tissue, the soft skeleton of the body. As fascial and interstitial tissue it is the firm soft tissue found through and around the muscles, giving the individual muscles shape, and binding them in their proper relations. As ligament it gives rigid support to the skeletal joints. As periosteum it surrounds the bones. In parallel bands, as in the ligaments and tendons, it is unstretchable. Allowing for quantity and different structural relations, the same holds as to the fibrous tissue elsewhere.

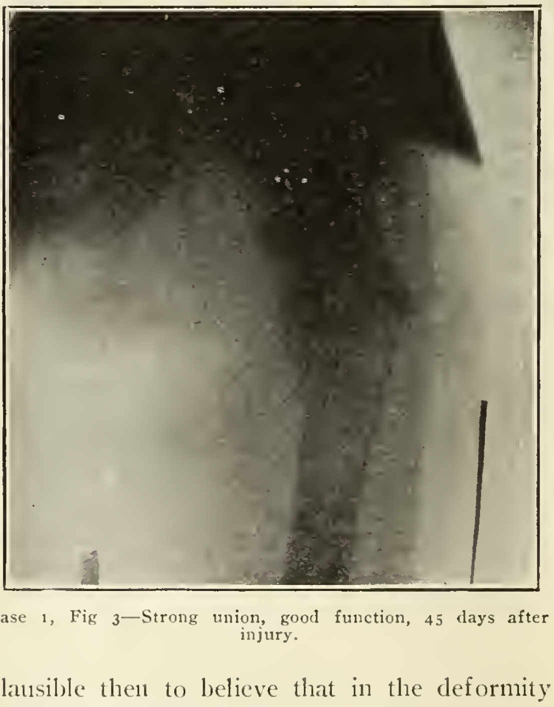


Case 1, Fig. 1.—Upper Fragment pointing externally and posteriorly.

The muscles, on the contrary, are contractible and stretchable. We know that when at rest, whatever the position of the limbs, the hypothetical contractile pull of the muscle is nonexistent. There is complete relaxation of the antagonizing muscles. This is beautifully exemplified in the many postures that may be assumed in sleep or in complete anesthesia. Is it not plausible then to believe that in the deformity resulting from traumatic fractures, the muscles play but a minor rôle? They have placed the skeleton with its firm ligamentary bands into cer-

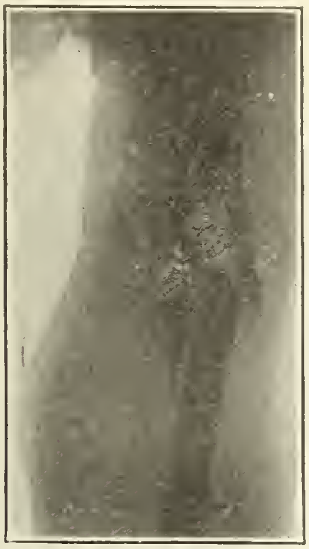


Case 1, Fig. 2—Slight external deviation of upper fragment corrected by increased lateral traction

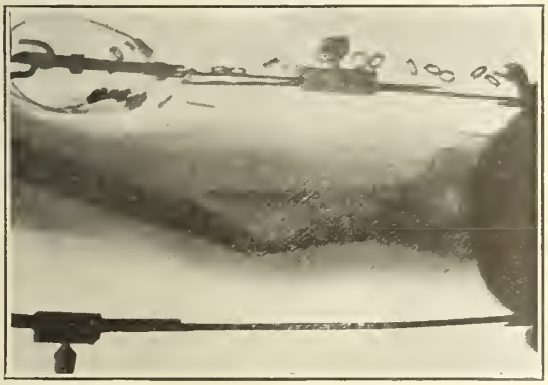


Case 1, Fig 3—Strong union, good function, 45 days after injury.

tain positions. The momentum of the traumatising force meets a relatively unyielding object. The resultant of the impacting forces is transmitted to a bone or bones occupying at the moment of injury a definite relation to the impacting force and to the other bones of the framework. The yield is in the line of least resistance.

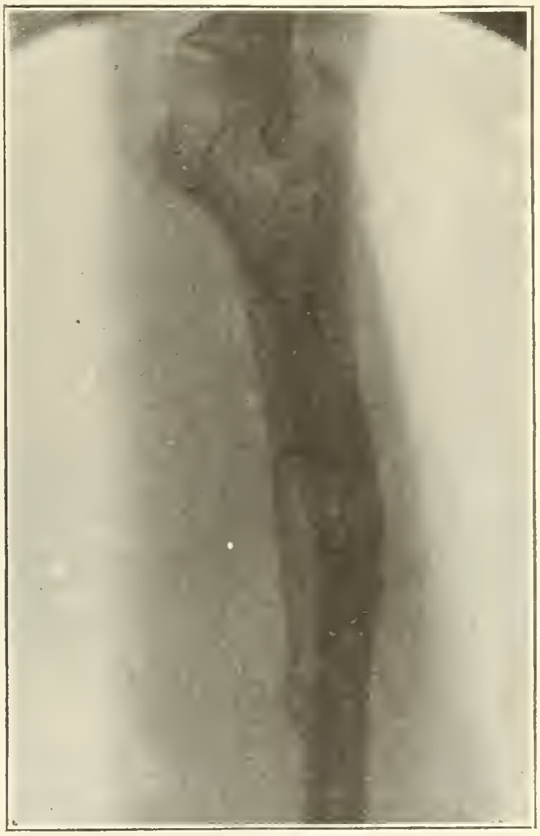


Case 11, Fig. 1—Inner lower fragment split free to the condyles.



Case II, Fig. 2.—Upper fragment withdrawn from impartation and held rigidly to end of lower fragment.

It is obvious that the bones and their firm ligamentary attachments offer the greater resistance to the traumatising force. The enveloping muscle and fibrous tissue act only as bumpers, absorbing some of the force of the blow. The displacement present is the ultimate reached in the yielding, until the force of the impact shall have been dissipated by the resistance offered. The immediate deformity is the deformity that we have to treat, for no muscle pull can force the bone from its new seat in the lacerated tissue into undamaged tissue. Certain deformities are more common, because in our ordinary way of living certain reception positions of the body and directions of the trauma are more common. If the limb is resting quietly in its deformed position and no sensory nerves are irritated, the muscles are relaxed and there is no pain. In the thigh fracture here illustrated, the reputed action of the iliopsoas muscle cannot account for the external and posterior position of the upper fragment.



Case 11, Fig 3—Complete union, perfect function, 4 months after injury.

When a fracture is present, if the muscle contraction were the sole factor in the continued deformity, then under the muscle relaxation of ether we should be able to replace readily. Such we all know is frequently not the case.

The connective tissue in variable quantities is throughout the soft tissues. In a fracture it has been disturbed in its relations. Practically immediately after a fracture inflammatory lymph invades the affected tissues. This tends to set the fibrous tissue in its new relations. This exudate increases for several days. With its subsidence the organized plasma which remains progressively increases the resistance to replacement. Irritated muscles contract and add to the resistance. Where with relaxation of the muscles under ether we still have resistance, my own belief is that the fibrous tissue offers more than mere muscle elasticity. In any fracture where the soft tissues are not contused and lacerated to a hopeless degree, they maintain their general relations to each other. If the limb is brought back to its normal position and length, they will automatically resume their correct relations. The bones will do likewise unless a projecting spicule prevents. If this can be slipped around into place we will have perfect replacement.

We would conclude from the foregoing that: (1) replacements should be at the earliest moment; (2) the method of replacement should be as free as possible from irritation; (3) normal length and position of the limb secured in a safe manner is ideal.

FRACTURE TREATMENT

In the replacement and treatment of acute fractures there are a few cardinal principles: (1) jeopardy of the patient's life or well-being is inadmissible; (2) comfort and the minimum drain on the patient's vitality must be considered; (3) the best possible return to normal relation and length of the part is of primary importance.

Considering these factors in the modern treatment of fractured thigh bones: The Thomas splint and its modifications are possibly the most universally used. The most advanced adaptation is with a suspended splint and ice tongs. In the ice tongs we have immediate application of the pull to the bone as in no other method. The resistance to the pull is limited to the counterpressure against the ischium and so much of the body weight as can be brought to bear. This is frequently insufficient for complete reduction. Owing to the one point pressure contact against the ischium the splint is not stable; some movement of the bone fragments is possible and pain is present. The ice tongs must be correctly made and properly applied. Dangers of infection and bone injury are not negligible. The results are fairly good. It is crude and repulsive and justified only in the absence of a better method.

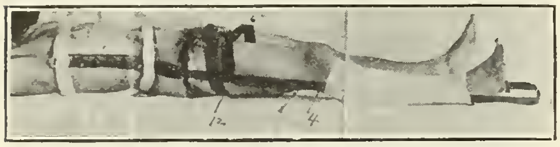


Fig. 7.—Thigh splint, note traction band (12) caught over an arm on the bridge (6) and here giving upward and external traction.

In the abduction method emphasized by Whitman, we have the same underlying principle which is present in the marked flexion of the elbow or the elevation of the arm. The floating fragment is stabilized in its socket the better to bring the other fragment in contact with it. To the degree that this is carried out will the contact be made. There is still the necessity for extension to overcome the shortening. The maintenance for many weeks in this strained joint position increases the tendency to ankylosis. The application of plaster of Paris to the trunk is an element of no little danger. It has taken life. Whitman can well say that he prefers to treat younger people. In a moving picture of the application of this method at the recent meeting of the American Medical Association, I could only condemn the careless production of wrinkles in the application of the padding. Old people are seriously imperilled by this treatment.

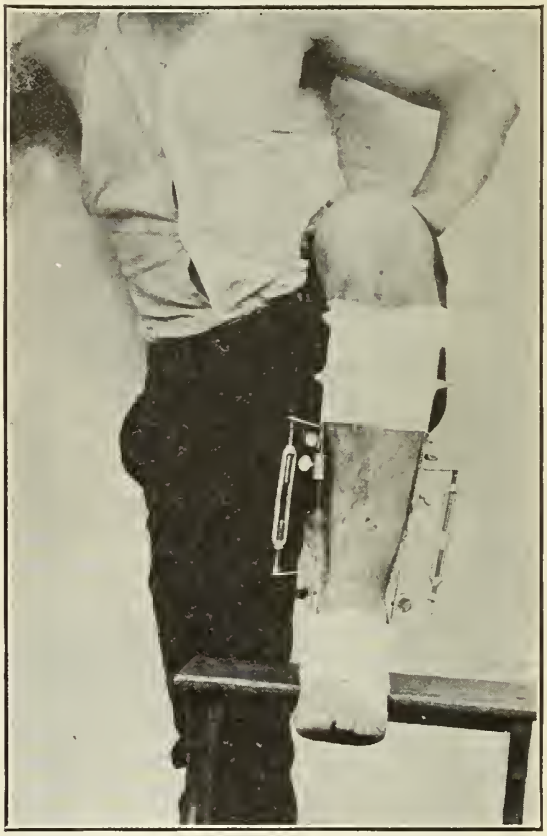


Fig. 8.—Leg splint, upper plaster is placed above the knee when the site of fracture is in the upper third of leg.

Neither of these two methods can guarantee a comfortable extension to the normal length of the limb.

For some time I have felt that extension to the normal length of the limb would cause the soft tissues and bones to recede naturally to their proper relations and that the body itself could be utilized to bear the full strain. When we know that men have held more than a thousand pounds when the weight was properly distributed, it is appreciated that the strain to pull a limb to its normal position should be easy of accomplishment.

I have devised splints for all the major long bones, that are based on the principle of sufficiently distributing the strain. All will bring any shortened bone in acute fracture to its normal length and will retain it rigidly in that condition with greater comfort than any treatment that I know of. In the construction, one element is rigidly attached to so much of the body above the fracture as is desirable and the other element similarly attached below. The overlapping arms of these members are slidable on each other by a turnbuckle which is quickly attachable at a convenient place on the ends. When the fracture is reduced, the overlapping ends are clamped together and the turnbuckle assembly removed. While the site of the fracture is exposed it is stabilized by the overlapping ends. There is no jar and hence no pain in the reduction. But little power is required for the extension and the separation is possible with mathematical accuracy. I wish to emphasize that I get complete extension with a degree of comfort never before experienced. The thigh case illustrated was always cheerful and gained in weight while in bed. Lateral traction is secured, when necesasry, from a bridge mountable to the overlapping arms where needed.

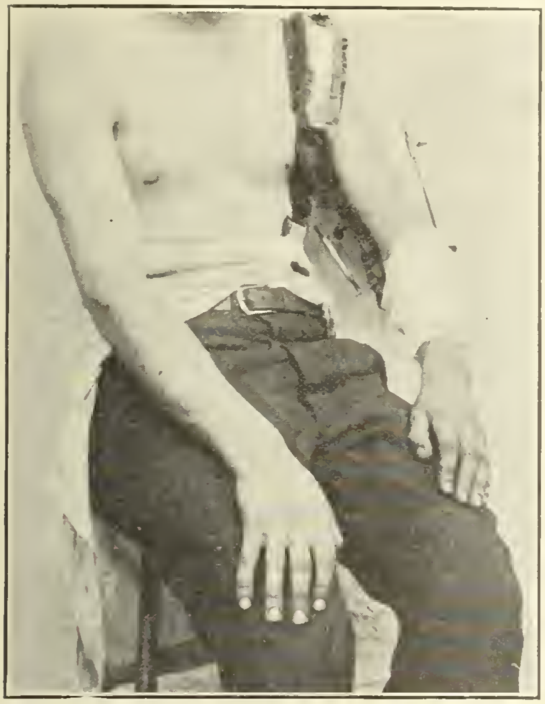


Fig. 9—Arm splint, both joints are movable during treatment, turnbuckle extension made only on inner arms of splint.

In the thigh splint lead strips may be used to give the contour of the side of the body, of the leg and the buttock ring. The splint units are readily shaped to fit. There are numerous threaded holes in the splint members so that with thumb screws the appropriate parts are quickly assembled. Being a good fit the buttock ring rests against the ischium, the pubis and the ilium. The ring is swivelled to the side arms and when left a bit free will automatically accommodate itself to the three supporting parts of the innominate bone. The trunk splint takes some of the strain from the ring. The leg splint is imbedded in plaster with a Buck extension as supplementary. A more complete description is to be found in the April issue of the *Annals of Surgery.*

The following cases will demonstrate results gained by the treatment:

Case 1. A white woman, aged 47, slipped on the kitchen floor and fractured the left thigh below the trochanters. Upper fragment pointing externally and posteriorly. Marked deformity and shortening. Figure 2 would appear to show hyperextension in the replacement, but this is due to the fact that a spicule of bone on the anterior margin of the upper fragment prevented perfect forward replacement. After six weeks the trunk arm was replaced by a short arm, making virtually a Thomas splint. She sat upright in bed with no joint pain. After eight weeks all splints were removed. The knee was

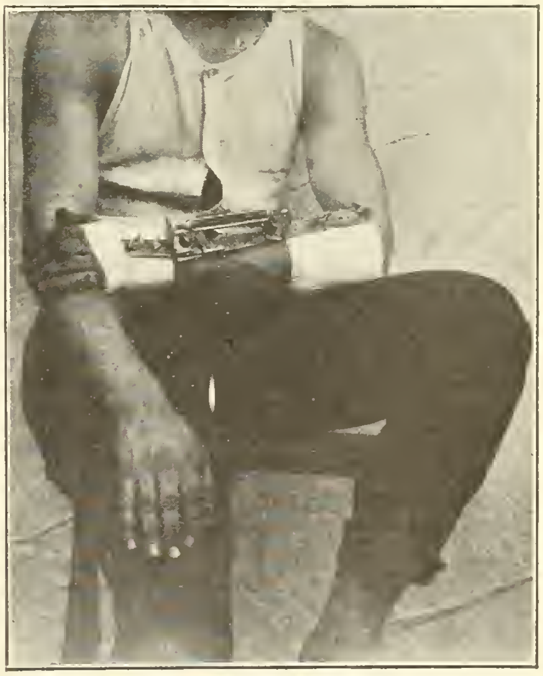


Fig. 10—Forearm splint for lower section of forearm. Fractures in the upper third follow the plan of the leg splint.

perfectly comfortable at 90 degrees flexion. She returned home on crutches with a caution to spare the limb for another month. Firm union and *no* shortening.

In the arm splint a movable member is fastened to the chest in addition to the shoulder girdle. In practice I have not needed this but some cases may require it where the circulation shows any impairment. Straps are imbedded in plaster on the forearm. The lower overlapping arms are connected with these imbedded strips in the axis of the elbow joint. Turnbuckle extension is used as in the other splints. Artificial leather and felt is laid under those splints which will bear against the body and, after all adjustments are made, this is laced around the splint.

Case 2. A white girl, aged 20, service of Dr. Whiting, fell in the gymnasium—comminuted fracture of the left humerus in the middle third. The upper fragment impacted the lower, splitting the inner half free to the condyles. Splint applied one week after the injury. Complete extension, absolutely no pain during reduction nor for one minute subsequently. After eight weeks there was heavy callus; apparently firm union but, owing to the x-ray picture, a special arm splint was substituted for another month. Fingers never puffed nor any abnormal sensation whatever. The arm could be placed to the top of the head at once.

In the leg splint the upper straps are imbedded in plaster, where indicated by the fracture. The lower are imbedded in a plaster foot or clamped or screwed to the patient's shoe as most convenient.

The forearm splint has pieces imbedded in plaster on the hand and above the fracture. The slidable strips are attached to these imbedded strips. The illustrations are sufficiently definite. The only obstacle that I know of to prevent perfect reduction is in those cases like Case 1, where an obstrucing spicule requires too much hyperextension or cannot be revolved around the other fragment to its natural position.

I have presented four standard types of splints. Complications might require modifications. For instance, a pelvic ring might be used in adding to or in place of the buttock ring. All the splint pieces are interchangeable. Different pieces can be utilized to construct a special splint for a particular need. It should always be a basic principle to build an ample and rigid support above and below the fracture.

SUMMARY

(1) Complete extension to the normal is possible in all acute fractures of the major long bones.

(2) Compound fractures are especially appropriate for treatment as the fracture area is always exposed.

(3) The replacement is deliberate and mathematically sure, with remarkable absence of pain, and the retention during treatment is absolute.

(4) The period of convalescence is reduced to a minimum.

(5) Joint mobility has been most gratifying.

(6) The great comfort of the patient is not one of the least points for consideration.

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DISCUSSION

Dr. Damon B. Pfeiffer (Philadelphia): The essential thing in the treatment of fracture of the long bones is to secure good anatomical reduction and to maintain the fragments in position until union occurs. It is true of course that this does not represent all that is necessary for the welfare of the patient, and in many cases it lacks much of the finesse necessary to secure early and satisfactory return of function, but nevertheless to secure good reduction is a sine qua non of the successful treatment of fracture of the long bones. It can also be asserted with almost equal dogmatism that to secure good anatomical reduction, in the vast majority of instances means the use of traction, of extension, and of counter extension. Sooner or later in the treatment of these fractures some form of traction must be employed. In simple transverse fractures, immediate traction and manipulation not infrequently results in reduction and the problem is at once simplified, demanding nothing more than the application of splints to secure alignment. We need no complicated mechanism in such fractures as these. Unfortunately, a great percentage of fractures we see are not such easy problems. They are oblique, comminuted, over-riding, sometimes with interposed tissues and sometimes, to make matters worse, they are compound. It is in the treatment of these fractures that we have our resources greatly taxed, and it is only fair to say that at the present time there is no universal agreement on the best method.

We must, therefore, give consideration to any proposition which aims at bettering the treatment of complicated fractures. Now Dr. Masland, it seems to me, has attacked this problem at its vital point, namely, the securing of adequate extension. The vitality of the old method of Buck's extension was due very largely to the fact that it laid emphasis on this very important feature of treatment, but its defects were such that at the present time, it has almost passed into the discard. Still, many fractures can be treated with Buck's extension, but experience has shown that in general use, the results left so much to be desired that there has been a universal demand for improved methods, as evidenced by the activities of Bardenheur of Cologne, and of Thomas and Jones in England, in the development of simple traction splints; of Sir Arbuthnot Lane, who advocated and popularized reduction by direct operative attack; of Codivilla in Italy, and Steinmann in Switzerland, who employed transfixion pins to gain most effective traction; of Ransohoff in America, who made the valuable adaption of the ice tongs to secure extension; and of many others, but especially the surgeons of the great war, who added precision, detail and great experience to the treatment of fractures by traction and counter traction, both of which are made most effective by suspension.

It is not unfair, I think, to say that the surgeon who does not use the principles of the Balkan frame, the Thomas splint and one or more of the newer methods of direct traction is not competent to treat fractures of the femur which may be considered the pons asinorum of the fracture surgeon. Not only are results better to-day as a result of improved methods, but the profession has a quickened conscience in respect to this subject.

After all, the only conclusive test of any method is that of experience and our best results are not yet sufficiently good to refuse a hearing to a new method. There is no question that Dr. Masland has devised an apparatus that will give unlimited traction and counter traction. The questions to be determined by experience are: (1) Is it sufficiently simple to warrant general adoption? (2) Will the tissues which constitute the piers against which pressure must be made endure this pressure for the requisite time? (3) Will atrophy of the tissues subjected to pressure permit redisplacement unless constantly checked and changed? (4) What is the danger of vascular disturbance by pressure? (5) Does it permit of easy inspection of the parts subject to damage? (6) Will the attempt at rapid reduction prove as safe and as successful as the methods of continuous traction?

I would point out in closing that the success of any method of extension and counter extension is measured, not by its mechanical power, but by the method of application of that power to the tissues concerned.

Dr. Levi J. Hammond (Philadelphia): I should like to ask Dr. Masland if I understood him aright in saying that he had actually succeeded in replacement of the upper fragment of a fracture of the upper third of the femur merely by traction exerted by a four-tail bandage so placed as to secure it against the upper fragment only. It is interesting to me to have learned that, for the reason that I have always found it extremely difficult and usually impossible to secure apposition without bringing the lower fragment up to the upper, by flexion of the leg upon the thigh and the thigh upon the abdomen, because of the action of the iliopsoas muscle. I shall attempt to follow Dr. Masland's suggestion, though I doubt that I shall be equally successful.

Dr. Masland (in closing): I wish to emphasize the marked external and posterior displacement of the upper fragment of the fractured femur shown. Here the reputed action of the iliopsoas is totally absent. The four-tailed band for lateral traction is necessary on the sloping buttock to prevent slipping. The upper tails are directed upward to be attached to points on the buttock ring in front and behind. The other tails are drawn laterally across the limb to an arm on the bridge of the splint. The perfect lateral correction shown in the final x-ray is a demonstration of the value of lateral traction. This woman had about four inches of shortening and if there is anything to-day it is just a mere shade of lengthening. She is absolutely sure that her limbs are normal and it would take an expert with a fine caliper to find out that there is any difference between the two.

A DISCUSSION OF SOME RECENT TENDENCIES IN INFANT FEEDING*

JOHN LOVETT MORSE, A.M. M.D.

BOSTON

In the course of years and with the passing on of the men who were my teachers and elders, I have, through no fault of my own, become one of the oldest pediatricians of the country. While not as senile as I know some of the younger men think me, I suppose that I have perhaps begun to suffer from the infirmities of age, to think that the past was better than the present and to cling rather closely to the old before taking up the new. After trying to give due allowance to these tendencies, I cannot help feeling, nevertheless, that infant feeding has deteriorated during the last decade. The pediatricians of the country have, as a class, forsaken the gospel of percentages, as taught by Rotch and his coworkers, and have followed after strange gods. Their whole idea now seems to be, not "how well and scientifically can we feed," but "how easily and simply can we feed?" They apparently think only of themselves and not at all of the babies. They wish to reduce everything to a routine.

"Simplified" Feeding.—To my mind it is idle to talk of simplified infant feeding. Infant feeding is not a simple matter and never will be. Infant feeding is a difficult matter and requires the same knowledge and study that other branches of medicine do. The results obtained well repay, however, the time and study given to it. It seems to me equally irrational to believe that all babies can be fed on the same food, no matter what it is or how famous the man who devised it. It will be impossible to feed babies satisfactorily in a routine way until all babies are born of the same parents and live under the same conditions and in the same environment. Even then they would probably all be different. Babies are individuals, each with its own inheritance, its own special digestive powers and its own peculiarities. It cannot be expected, therefore, that all babies will thrive on the same food or on similar foods. The food must be fitted to the individual infant, not the infant to the food.

"Percentage" Feeding.—Many physicians have never understood the fundamental principles of calculating foods in percentages, others have forgotten them and others have wilfully misrepresented them. In the first place there is no such thing as percentage feeding, if by this term is understood a routine method or system of feeding. Percentage feeding, so-called, is merely a

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

method of calculation to insure that babies may be given proper amounts of the various food elements in their food. It neither presupposes nor implies anything as to what should be in the food or why it should be there. These points must be determined in other ways.

Everyone must admit that there are only a few food elements: fats, sugars, starches, proteins and salts, with certain additional and important accessory food factors. All foods must contain some or all of these elements; otherwise they are not foods. These food elements serve different purposes, are digested and metabolized in different ways. They should, therefore, be provided in the food in the proper amounts for the infant. Infants being individuals, these amounts must vary in accordance with the needs of the individual baby. The amounts needed must be determined by a careful study of the baby. When they have been determined they can then be best given to the baby by calculating the amounts to be put in the mixture in percentages. Percentage feeding is thus simply a method of calculation and a means of giving the individual baby exactly the food which it needs. It induces close study and clear thinking. It is not the method of the lazy man or of the man who cannot or will not think. He falls back on the routine or simple method recommended by someone else. It almost seems as if physicians were steadily becoming more lazy or perhaps even losing the power to think. It is the most flexible method of feeding, because all the new discoveries in the field of pediatrics can be utilized and fitted into it.

Pediatricians are not quite so certain now as they were ten years ago that fat is the root of all evil. Many of them have forgotten it in their anxiety about the sugars, while the more advanced are beginning to worry about the salts. Some of the more sensible have always kept their heads, however, and have realized that any or all of the food elements may cause trouble in individual cases, while a few of the elect have studied their patients carefully, varied the food elements to suit the individual needs and calculated the mixtures in percentages. Our knowledge of the damage which the various food elements, when given in excess, may do, as well as our knowledge of the damages caused by the lack of a sufficient amount of them, has increased materially during recent years. Unfortunately, however, little use has been made of this knowledge, because of the increasing tendency to use routine measures rather than to think.

Whole Milk.—If babies should be fed as individuals, then the routine use of whole milk and whole milk dilutions is in itself bad, because the relation of the food elements to each other cannot be varied to fit the individual needs. The fat must always be relatively low and the protein relatively high, that is, a relation contrary to that in human milk. There is, of course, much difference of opinion as to whether this relationship in human milk should be followed in artificial foods. Personally, I believe that it does show that the average well infant is best fitted to handle foods with this relation of the elements and that in a general way this indication should be followed. Many babies thrive on whole milk dilutions, especially if they get plenty of carbohydrates in addition. This may be because they as individuals need a low fat and a high protein. It may also be that they thrive in spite of it. They must certainly be at a disadvantage in that they have to expend unnecessary energy in using protein in place of fat for heat.

Dry Milk.—One of the present fads in infant feeding is dried milk. This fad is evidently fostered by the manufacturers, as I find that a considerable proportion of the reprints which I have on the subject, although written by reputable men, was sent to me by the manufacturers. There is, however, nothing new about dried milk. It has been used for years in a number of the proprietary foods, Nestle's, Allenbury's, Mammala and Malted Milk, in combination in them, of course, with other things. Great results are claimed for it; so there are for the proprietary and other foods. In fact, it is hard to find a food on which some babies will not thrive. The evidence seems to warrant us in believing that in certain disturbances of digestion it agrees, when dilutions and mixtures of fresh milk do not. If this is true, there must be some reason for it.

The Dryco Brand is made from partly skimmed milk and contains: Fat, 12%; sugar, 44%; protein, 34%; salts, 7%. The Klim Whole Dry Milk: Fat, 28%; sugar, 38%; protein, 26%; salts, 5%. The Klim Skimmed Dry Milk: Fat, 1.35%; sugar, 50%; protein, 38%; salts, 8%. (*Root-Charlotte Medical Journal*, May, 1920.)

It is evident that dilutions of these preparations will contain a relatively low percentage of fat, so low as to be almost negligible in the Klim Skimmed Dry Milk, a relatively very high percentage of protein and a fairly high percentage of sugar. Babies suffering from fat indigestion would naturally do well on them. They would probably do well on mixtures of fresh milk containing the same percentages. Moreover, the relationship between the fat and protein can be altered in the fresh milk mixtures, while it cannot be changed in the dried milk dilutions. It is claimed that the casein is divided into minute particles during the process of drying, that it cannot for this reason be coagulated into large curds by rennin and hence is more easily digestible than the casein of fresh milk. This sounds reasonable, but I have not seen any chemical or experimental proof of these assertions. Even if so, it is doubtful if the casein is in any more easily digestible form than when it is acted upon by citrate of soda or the milk is boiled or "peptonized." However, the nitrogen absorption and utilization are probably as good on dried as on fresh milk, but no better. (Lane-Claypon, Milk and its Hygienic Relations, 1916.) It is said by some to be free from harmful bacteria. It is not free from bacteria, but their number is much reduced. They do not grow as well, because the milk is dry. (Lane-Claypon.) It would seem justifiable to suspect that the vitamins of the milk might be injured in the process of drying and that its use might lead to the development of some of the deficiency diseases. Hess and Unger (*Amer. Jour. Dis. of Ch.,* April, 1919) have shown, however, that some dried milk, at least, has antiscorbutic power. How much it contains depends upon the age of the milk before it is dried, the time of year it is obtained, the feed of the cows, the method of preparation and possibly on how long it is kept before it is used. Rickets, which is probably not due to a lack of vitamins, need not be feared, therefore, in this connection. In any case, the development of scurvy can be easily prevented by giving orange juice.

Dried milk is evidently, therefore, not a panacea. It is a safe food to use for a time when for any reason it is impossible to procure fresh milk or to take proper care of it. There is relatively little danger of the development of scurvy from its use and this can be easily prevented by the administration of orange juice. It is useful in conditions in which a food containing a low percentage of fat and a high percentage of protein is indicated, but it is probably no better than similar preparations of fresh milk. The casein is probably changed in character, but is not any more digestible than casein changed in other ways. The relative proportions of the various food elements are fixed, thus making it a routine food, insusceptible of modification to fit the needs of individual infants.

Boiled Milk.—Another relatively new procedure is the boiling of the milk. In the South this is apparently necessary because of bacterial contamination. In places where boiling is not necessary on this account, many physicians do it as a routine without apparently knowing why they do it or what they expect to accomplish by it. The object should be to prevent, as Brennemann has shown, the formation of large casein curds. That is all that it does. It is merely one of the ways to accomplish this. It diminishes the antiscorbutic content of the milk to a certain extent, but this diminution is unimportant, if boiling is necessary for other reasons, because any harm which may result can easily be prevented by giving a little orange juice.

Breast Feeding.—Rather more attention has been devoted to the encouragement of breast feeding during the last decade than for a time before. Sedgwick (*Jour. A. M. A.,* 1917, lxix, 417), Sedgwick and Fleischner (*Amer. Jour. Pub. Health,* Feb., 1912) and Cooley (*Archiv. of Ped.,* 1921, xxxviii, 446) have shown how much can be accomplished in the development and extension of breast feeding. There is nothing new about all this, however. Physicians have been bewailing the fact that women did not nurse their babies ever since the time of Hippocrates and our predecessors of one hundred years ago were writing in almost the same words that we are using to-day. Dluski (*Thèse de Paris,* 1894) and Martin (*Archiv. f. Gyn.,* 1905, lxxiv, 513), moreover, got a larger percentage of women to nurse their babies than has been obtained to-day. I do not wish to be pessimistic or to discourage any increase in the number of women who nurse their babies, but nevertheless, I feel confident that, long after we are forgotten, our successors will be writing and talking in the same way that we are now.

Milking Machines.—A recent development is the milking machine for women. Abt (*Archives of Pediatrics,* 1921, xxxviii, 460) and Van Hoosen (*Archives of Pediatrics,* 1921, xxxviii, 529) have recently shown some strange and wonderful models. Again I do not wish to be a "crape hanger," but I cannot but still believe that the baby is the best, the cheapest and the most convenient milking machine.

Feeding in Second Year.—The most dangerous tendency in recent years, it seems to me, is to increase the diet of babies too rapidly. It appears to be a part of the general tendency of the times to hurry the development of the young, to treat babies as if they were young children, young children as if they were youths, and youths as if they were adults. Childhood and its joys will soon be a thing of the past, if the present trend is not checked. In my opinion it is wrong to give meat and green vegetables to young babies. Milk should form the basis of their diet until they have passed the period of infancy. The simple starches, beef juice and broths may be given at a year or earlier, eggs and potatoes at eighteen months, meat at two years or a little earlier, cooked fruits and orange juice at a year, or younger if there is some special reason, green vegetables not at all. There is no need for the green vegetables to supply bulk to the food, salts or vitamins. Milk supplies plenty of bulk. The baby that takes a quart of milk a day, gets more of the salts, except of iron, than it can possibly utilize. It gets enough iron in its cereals, bread, egg, beef juice and broth to more than make up the deficit. The color of green vegetables is not due to iron but to chlorophyl and that of carrots to carotin, not iron rust. In fact, the amount of iron present in the amount of green vegetables given to infants is surprisingly small. (Morse, *Jour. A. M. A.*, 1920, lxxiv, 577.) The caloric value of the green vegetables is so slight as to be practically negligible. The baby that gets a quart of milk a day gets all the A and B vitamins that it needs and does not require vegetables for this purpose. There may be a little lack of the antiscorbutic vitamins in the milk, but this will probably be made up by the other foods and can easily be supplied by giving a little orange juice. The protein of milk is as available as that of meat for growth. There is, therefore, no physiological need for the present liberal diet for infants. Some of them thrive on it, it is true. In my opinion, however, they thrive in spite of it rather than because of it. I thoroughly believe that it throws an unnecessary strain on the digestive powers and that, even if it does not make the baby sick, it in many instances retards instead of hastening its development. Many pediatricians will not agree with me and will say that their experience proves that I am wrong. I can only answer them in the words of Hippocrates, "Experience is fallacious and judgment difficult."

DISCUSSION

Dr. Alfred Hand (Philadelphia): On the points raised by Dr. Morse in his paper, which, to me at least, is a very refreshing one, I find I am in such accord as is rarely found between any pair on the much-discussed subject of infant feeding. Having started to work in this field about the time when Rotch's first edition appeared, the great value of thinking in percentages was early impressed on me, receiving added emphasis by the comment of one of my teachers, Louis Starr, who said: "You young men will find it much easier to learn how to feed infants by that method than we did, with our empirical working out of various mixtures." Finding the percentage method such an excellent tool with its easy adaptability to the individual patient, is, perhaps the reason why I have never been inclined to take up hurriedly each new fad, shall I say, or line of feeding, such as, to mention a few, whey-mixtures, buttermilk, malt-soup, eiweiss-milk, the dried milks to which Dr. Morse has referred, and more recently, the butter-flour mixture. I am grateful, however, to those who have tried them out, for I find a few of them occasionally useful in hospital work. But I do not wish to imply that infant feeding is an easy thing, for, as Dr. Morse has said, the decision as to what percentage to prescribe often involves close study and hard thinking.

There is not time for me to touch on all of Dr. Morse's points, but with regard to vegetables I venture to predict that ten years from now, and possibly earlier, the great majority of pediatrists will not countenance the giving of vegetables to infants under a year old. Personally, I cannot see any physiological reason for doing so.

For the diet in the second year of life, I find that I am a little more radical than Dr. Morse. My guide for feeding during this period has been the progress of dentition, the incisors having already appeared and being exercised on hard crusts of bread; as the first molars appear early in the second year I allow first the cereals, oatmeal, wheatena, cream of wheat, farina, Ralston and Pettijohn, then soft boiled eggs, followed by the starchy vegetables, baked potato and boiled rice, and then the green vegetables. The appearance of the canines I believe to be an indication on the part of nature that the system is ready for the addition of meat to the diet, which is usually about the eighteenth month, and I have always preferred to have my patients get their beef juice by the act of chewing rather than have it expressed for them.

Dr. Edwin E. Graham (Philadelphia): I think that I shall have to be considered in the same class as Dr. Morse. Most of us who are perhaps a little older, started under the teaching of Rotch, and we have succeeded so well by following this teaching that perhaps we have not seen the necessity of changing.

I think the individual who is willing to feed by the percentage system has an opportunity, first, of studying his patient very carefully, deciding exactly what the child should have, and then is able by this percentage system to give the child exactly what he has thought out that it should have. Now, that is practically all that the percentage system is. It is not a system where a child of six months old is given certain percentages and another child of nine months given certain percentages, but it enables the physician who is willing to think, who understands the various necessities for the various food elements in the individual child, to work out for that child exactly what the child requires.

In regard to fat indigestion and the fact that certain children do well on certain foods, there is no doubt that some children thrive well on foods that contain a small amount of fat, as in whole milk mixtures. Others do well on top milk mixtures that may contain more than four per cent of fat and some of these babies that take more than four per cent of fat are often only a few months old. Every pediatrist of experience, however, has seen how often these young babies, fed this excess of fat, suffer from fat indigestion and he has also seen how many of these infants, fed on whole milk mixtures, suffer in their development from the lack of fat, so that while some children do well on high fats and others do well on low fats, many of the babies, fed according to this plan, do badly.

I want to endorse very heartily what Dr. Morse has said about easy methods of feeding. I think intelligent feeding is one of the most difficult problems in pediatrics. It is so difficult that the older practitioner rarely will study it very thoroughly, and in fact it is my experience that it is one of the most difficult problems to teach to a class and can best be taught to a class in sections. For years a considerable part of my teaching of infant feeding has been relegated to a corps of able assistants, who take the class in small sections, talk it over with the men and explain it to them. I think easy methods of infant feeding are just schemes to divert physicians from the proper methods of study.

I read a paper before this section one year ago that contained very largely the principles which Dr. Morse has explained to-day, and in it I took exactly the same attitude as he did in regard to green vegetables. I do not see any necessity for feeding them so early in life. Another thing is that the cooking of these vegetables, which is kept up for several hours, practically destroys a large percentage of the vitamins. Every bottle-fed baby should be given orange juice. I give it to a baby two or three weeks old if the baby is on a bottle.

I have taken the trouble wherever I am, whether in Philadelphia, Boston, or the North or South or West, to talk this matter of green vegetables over, and I have gone into hospitals and have studied their charts. We have in our mind what the normal child is, we have in our mind what the normal development for that child should be. Now, there is just one way of deciding what the advantage of this new feeding is, and that is for these men who are practicing this new method of infant feeding to show us their charts, not one chart but many. I have very carefully studied these charts, where I had an opportunity, and they have not convinced me that the new methods are better than the old. These men should keep records of all their cases, come to us, one year, two, three, four years from now and say to the older men "here are the methods, let us study them out and see what they have done." Another thing I brought out in my paper was that most of these children fed by newer methods get a subnormal amount of fat.

Dr. J. P. Crozer Griffith (Philadelphia): Dr. Morse has expressed throughout his remarks much of what has been in my mind a great deal. Here might be said in addition, that one grows very tired of hearing of "methods." We read of this method of feeding and of that, whereas we should not have any methods except in a most general way. There can be no plan for the feeding of infants that varies as much as infants do. I need not say anything about the value of percentage feeding. There is, in reality, no such thing. It is not percentage feeding, but percentage thinking. It is simply a means of calculating what an infant is receiving or should receive.

Now as to the so-called "simple dilution method," why should we limit ourselves in the choice of food, as this plan necessarily makes us do? Why *must* we be obliged to give an infant approximately 2 per cent of protein every time we give 2 per cent of fat? Yet this is what you have to do if you follow the simple dilution plan. Personally, I do not care to be hampered in this way. I want to feel freer. The only possible advantage is, that it makes feeding easier for the doctor, but not better for the infant. I thoroughly agree with Dr. Morse, that it tends to make the doctor give up thinking. Let me remind you of one fact in this connection. The "simple dilution method" originated in Germany and was adopted by many in this country. I have nothing to say now for or against German scientific procedures; but if we cannot stand on our own feet, and must follow some other country, let us at least try to keep up with the procession. If you familiarize yourselves at all with German pediatric literature, you will find a very strong wave, indeed, toward a return to the giving of higher percentages of fat, the fat exceeding the protein in amount—something we cannot accomplish with the dilution of whole milk.

I am one of the greatest believers in low fat percentages for many sick children, but am far from believing that we should give a low fat percentage to every normal child, or indeed, to many ill ones. I agree with those pediatrists who do not think that it is a matter of indifference whether the calories be derived from fat or carbohydrate. Any procedure which ties us down to a few formulæ to be derived from whole milk dilutions is absolutely reactionary, unscientific, and old-fashioned.

Dr. Harry Lowenburg (Philadelphia): The way Dr. Morse presented the topic of percentage feeding anyone can believe in it, anyone can be enthusiastic. To my mind one reason why men have drifted away from percentage feeding is because of the multitudinous methods that have been proposed for carrying out the realization of the percentage idea, and also because of the fanaticism which would insist that one can obtain exactly in a bottle that percentage of the various elements which he seeks. This is a practical impossibility and is unnecessary and I think would be admitted by even Dr. Morse. First of all, we are dealing with an unstable product—milk. You may have a certain percentage strength in one section of the country and another percentage in another section, or in fact within a very short area. Even the percentage strength of the milk from the same source varies from day to day. The idea, I think, is to think in percentages, and probably instead of thinking in numbers, just think in letters, as Fat A, Fat B, Fat C, or Protein A, Protein B, Protein C, or Sugar A, Sugar B, Sugar C, etc., each succeeding letter indicating an increase in percentage of fat or protein or sugar or whatever we may be considering, then adopt some simple way to reduce or increase these various elements as desired.

I remember some fifteen or sixteen years ago when the American Medical Association met in Boston, a gentleman from Elmira, N. Y., read a paper on "Simple Percentage Feeding." He spread several blackboards full of formulas which he expected us to remember. They are simply alegbraic monstrosities. A correct idea would be to think in percentage, and have some simple way of arriving at the decided percentage, approximately. I feel that Dr. Morse struck the keynote of the whole problem of infant feeding when he said we must individualize. Anyone who sees a great number of feeding cases realizes that no two babies can be fed alike.

I want to speak further and with a great deal of humility, especially since it is from my own experience, which Dr. Morse and Hippocrates say is fallacious, and also from my own judgment, which both these distinguished gentlemen further add is doubtful. I felt when Dr. Morse was speaking that he was looking right through me. I feed solids early; I feed vegetables early; I have been doing so for years now and see no reason to change. I also believe it is not new, because the slum mother in Hogan's alley has been doing it for years and will continue to do it for her baby if you do not do it for her, but probably not so well. Dr. Graham is a neighbor of mine. If he will come to my office I can show him chart after chart from sucklings who have received solids early during the first year and all of them show advancement, as judged by the usual standards such as Dr. Graham enumerates must be our guides, namely, weight, teeth development, bone development, muscle development, vomiting, condition of bowels, general growth, vitality and the absence of rachitic symptoms and scurvy, etc.

Dr. Morse says that you can get protein out of milk as well as out of meat. That is true; however, not all proteins are alike. The substance exists in allotropic form, as it were, and many infants and children who cannot tolerate that found in milk will digest and assimilate that found in cereals, vegetables, eggs and meat. I feed cereals early. Just because cereal is more or less solid is no reason why we should not give it. It is a carbohydrate. Do we quarrel about giving sugar? Why then about the carbohydrate found in cereals? I never feed orange juice. I do not believe I have prescribed orange juice for the last ten years, except in cases of scurvy, which, by the way, do not originate in my own practice because I feed greens early. I see no necessity for its use and less necessity for it in those cases that receive these green vegetables early and in those cases that receive cereals and potatoes early. I have had a large experience with this method of feeding. I went to the telephone a little while ago. There was a lady at my office who had a baby with her, the grandchild of one of our most prominent physicians, a member of the faculty of Jefferson Hospital. I regret I did not have her come over. Her baby is one of the most magnificent specimens I have ever seen, and this baby did receive cereals early, eggs early, green vegetables early, and animal food early. Dr. Babcock tells him, and so have many other physicians, that they have reared their own infants satisfactorily in this manner. I do not hand this out as a panacea and I wish it clearly understood that I am speaking of well infants on either the breast or bottle, or undernourished infants without alimentary disturbance, especially those who have been kept on the breast too long. My practice is born of experience, born of observing the slum mother, to whom Dr. Morse, Dr. Graham and Dr. Griffith are not available. These mothers are guided by instinct. I believe this rarely errs in principle but may in method. Hence it is our duty to show them how to feed these substances intelligently. Some of the most enthusiastic supporters I have are among the mothers whose children received these vegetables and solid substances early.

Dr. Maurice Ostheimer (Philadelphia): There is a thought that has come to me from all this discussion: do these children, in whom infancy and childhood have been shortened, live as long as those who were fed on milk only during infancy?

Dr. Morse mentioned dry milk. I had a patient who tried an interesting experiment with a sample of dry milk. This woman had several children, and the children had several cats. Her baby was being fed on a low fat mixture, prepared with skimmed milk. I gave her the sample, telling her that she might try it. But she said she would not try it on her baby without first trying it on the cats. Next day she showed me that the cats would not touch it, preferring plain water. Naturally, her baby did not touch it either!

Dr. Morse (in closing): During the early part of the discussion I was rather afraid that no one would disagree with me. Fortunately, the last two gentlemen have to a certain extent. Dr. Hand spoke of using dentition as a guide to feeding. I wonder just what he would do with a baby that was born with teeth!

I want to say just a word about Dr. Rotch. I was a student in the Harvard Medical School at the time that Dr. Rotch began to study infant feeding. He then taught us that we were to give a modified milk which was like mother's milk, and that the way to get it was to mix one-quarter cream, one-eighth milk, one-sixteenth lime water with water, up to one and two measures of milk sugar to 20 ounces. This was the beginning of his so-called method of infant feeding. As time went on, he developed further the idea of thinking and calculating in percentages. He was a very open-minded man and accepted the newer ideas as they came along, working them into his plan. He never taught to give more than 4% of fat and never believed in high fat percentages. Unfortunately, he died before many of the newer discoveries in infant feeding came along and, therefore, had no opportunity to work them into his so-called system. Those of us who have followed him and his teachings have tried to be as open-minded as he was, and have taken up the new discoveries as they came along and worked them into our method of feeding, using, as always, percentage calculation materially as a basis. This so-called method of feeding is the most flexible that there is. Any new discoveries can be utilized and worked into it at once. No one except Dr. Rotch in the beginning believed that mixtures obtained were exactly accurate. He really did believe at one time that it was possible to get a variation of one-tenth of 1% in a mixture. He later realized that this was not possible. While the mixtures are not absolutely accurate, however, changes in the mixture, if the same ingredients are used, are relatively accurate. The same criticism of inaccuracy applies to whole milk mixtures, moreover, because the composition of the whole milk is never the same. The same criticism is also applicable to all the other routine methods.

Now, as to the question of giving solid food early, I do not see how anybody is going to convince anybody else. I can talk to Dr. Lowenburg indefinitely and he can talk to me, and when we get through we will both feel the same way as when we began. He did, however, bring up certain points with which I wish to disagree. I do not know of any Hogan's alley in Boston, but I am well acquainted with Houlighan's alley. I presume the conditions are much the same in both. We must remember that the children we see in these alleys are those that are still alive. The dead ones are not playing there. I certainly see a large number of children in the hospitals in Boston, most of whom come from places similar to these alleys. I suppose conditions are the same in Philadelphia. This shows that some of the children living in these alleys are sick.

The way I look at it is that what we are after in infant feeding is the greatest good for the greatest number. Our primary object should be to prevent children from being sick and to keep them well. What we want to do is to feed all the children in such a way that none of them will be sick. That is the main reason why I go so slowly. I see no objection to giving the cereal waters early. I do it very often. In giving cereals, as I see it, it is simply a question of the amount of starch which is given. Everyone realizes, of course, that after starchy foods reach the stomach, they cease to be solid.

In spite of my advanced age, which has been referred to several times, I cannot answer Dr. Ostheimer's questions as to the duration of the lives of the children which are fed in one way or another. I have not lived long enough.

POSTGRADUATE INSTRUCTION IN PENNSYLVANIA*

D. A. WEBB, M.D.

SCRANTON

This contribution on the subject of Postgraduate Medical Reform will probably offer scarce anything of originality in criticism or solution of an alleged educational defect. Its salient purpose is to keep alive the thought and effort of a reform in the present indifferent attitude towards the professional morale of the general practitioner. It took years of persistent plodding effort to raise the morale of undergraduate instruction in the United States, and the effort is to-day crowned with success. The time is now ripe for similar efforts in the virgin field of postgraduate instruction. The vineyard is coextensive with the profession; the enthusiastic workers in it discouragingly few.

Heretofore educators and educational agencies have centered their efforts on the undergraduate; with the acquisition of his degree he seemingly ceases to be of any other than sentimental concern to his Alma Mater. The term is then a misnomer. The mother does not acquit herself of all concern when her offspring leaves the parental roof. Deep solicitude and aid is always hers to give long after the final parting. She gives it because that is her function and her very *raison d'être* in the social economy. For four years of undergraduate life the medical school directs and leads her student along well defined paths. Her best aid to him is the enthusiasm of intimate association and interdependence between teacher and student. By that very ultra care of personal contact she ill fits the student for the abrupt assumption of individual responsibilities that come with graduation day. The soldier who is taught to fight only in close formation is illy fitted for the day of the extended march when he must do his own fighting.

And what is this close formation method of student work, utterly unlike the individual struggle that awaits him in practice? It is the overcrowded curriculum of undergraduate years that too often implies routine study without the time or opportunity for initiative work, collateral reading, comparative studies and correct generalizations. The personality is dwarfed in the automaton.

The leaders of broader vision assert that the failings of the graduate physician are not solely of his own making, that some of the blame must be placed on the methods of his early training. They assert that teaching in the schools is too didactic and too far removed from clinical experience, that it is a cramming system well fitted for passing examinations but destructive of individual thinking. "The receptive faculties are hypertrophied, the initiative faculties atrophied." They moreover tell us that the training as internes is inadequate, that the work is chiefly routine, that with few outstanding exceptions, there is a lack of coöperation between medical school and hospital.

Various remedies are offered for improving these conditions in undergraduate work, but that is not my theme to-day except to emphasize the observation that criticism of the practicing physician often implies criticism of teachers and methods of his undergraduate days, when the medical student of to-day is the physician of to-morrow. If then his training be inadequate (and I think the contrary cannot be truthfully asserted) and this inadequacy be not of his own volition, may the State, through its educational agencies, safely certificate him as competent without further supervision once he enters into general practice; or should it continue to aid, not to control, his efforts along lines of further improvement? After all, the medical degree and the state board examination is the low water mark of competency, it is the minimum of efficiency—a means to an end and not an end itself.

What then are the opportunities to-day for him to receive continued instruction which shall widen his horizon, make him a more efficient working unit in the community and increase his personal enjoyment in his work? Immediately arises the thought of the postgraduate schools, and consonant with it arises the thought of commercialism. We all know them and few of us are satisfied with them. The rank atmosphere of commercialism confronts one at the threshold and effectively cramps one's activities. In the report of the Carnegie Foundation by Flexner, and in another of the Mayo Clinic, by Wilson, they are subjected to a scathing criticism, the only common ground of agreement being a sincere desire not to train but to "skin" the graduate. Of course they are not an unmitigated evil, some of their courses are satisfactory, but on the whole, like private medical schools for undergraduate instruction, when they are dead the world will be better off. Flexner speaks of them as "compensatory adjustments," as "efforts to mend a machine that was predestined to break down," as "undergraduate repair shops" in which is exhibited the air of handicraft rather than of science. The students' part is mainly passive.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Postgraduate medical schools of the better class should incorporate themselves in adjacent universities and submit to reorganization along ideal university lines. The great endowed medical schools of the state should awaken from their half-hearted interest in the graduate and branch out into extramural or university extension courses that will reach the country practitioner. In no country in the world is there so great a distance and so fatal a difference between the best, the average and the worst physician as in ours and until that distance and that difference be adjusted by the big universities, most of our medical legislation will be abortive and touch only the superficial ills of the profession, leaving the radical cure unutilized. The need for postgraduate instruction will disappear as medical education becomes increasingly sound. I think it is a mistake to confer the degree of M.D. on graduation. A badge of lesser honor would be more in keeping with the embryo mustache and the undeveloped and immature diagnostician. The supreme or terminal honor of the Doctorate might more fittingly be the reward of postgraduate maturity with the fullest acquisition of scientific knowledge, the result of persevering prolonged application of principles and methods acquired in the earlier formative years.

In 1912 and 1913 Prussia had developed a system of giving postgraduate instruction to the country physician. It was a state supported scheme whereby at frequent intervals her university professors visited remote country districts and delivered courses of lectures to physicians who could not even temporarily afford the expense of study away from home. And in return for it the student practitioner was expected to satisfy, by examination, the state's supervising agencies and to show appreciation of their efforts to aid him. The scheme was to have been a prominent feature of the International Medical Congress which was dramatically and abruptly terminated in London in August, 1914. Some such similar solution for our postgraduate educational defects is, I believe, indicated in these United States, and I should suggest the state university as the agency through which our state may operate.

And we are indeed encouraged at the progressive spirit shown by our own University of Pennsylvania in her newly awakened enterprise of postgraduate diffusion of knowledge. We ask for her support in her local efforts in this city in the consolidation of schools, the better to accomplish her undertaking. It is because of our sincere belief in her ability to do, that we tender the suggestion that she advance yet further, emerge from local limitations and bear the torch, as did Germany in 1912 and 1913, into districts remote from university surroundings—wherever a group of physicians may be assembled to again become students under her supervision, at least, if not under her active and actual teaching. In my own town of Scranton she has successfully established, with the coöperation of local teachers, a School of Finance—Why not a similar school of medicine? We will supply the material necessary, hospitals, clinical material, students, lecture rooms, some of the financial quota and enthusiasm. In return we ask a paternal interest in the way of guidance, morale, a worked out plan of education of a fundamental, not ephemeral kind, the enthusiasm of trained teachers, and the desire and willingness to test out thoroughly with us this suggested scheme of university extension or extramural postgraduate real study to cover a period of years. We do not want any six weeks' course. If anything, we want a schedule of two or three years, properly arranged course of studies in the fundamental as well as in the purely clinical and practical branches. We promise to study.

The states of North Carolina, Wisconsin and Oregon, through their respective university extension services and in coöperation with county societies, are giving annual courses of graduate medical instruction. The course is financed by the sale of tickets to the physicians and surgeons who attend. A small surplus has been accumulated and is invested as a permanent fund for the promotion of medical education. In North Carolina the State Board of Health coöperates with the university and the county medical society.

In our own state of Pennsylvania an impediment has been the lack of interest shown by the student practitioner. A satisfactory survey of the difficulties, as of the splendid possibilities in Pennsylvania, was submitted by Doctor Roberts at the Scranton meeting in 1916 and may be found in the November, 1916 issue of the Pennsylvania Medical Journal. To that report I would add the suggestion that our energies must be concentrated in some central functioning educational agent, viz., our State University. Some such rallying center appears to be necessary in order to correlate the sporadic efforts of individuals and of county societies which have shown only partial fruition in the past. The desire or ambition for continued study seems to exist and clinical facilities in the way of hospitals are everywhere available. What is lacking is a courageous organizing and administrative head of broad vision capable of rescuing from waste and inaction those several public utilities for the public good. When that type of man appears, with a comprehensive plan of solid education analogous to the undergraduate course, our State Legislature and our county societies will assist him in making that education universal.

DISCUSSION

DR. GEORGE H. MEEKER (Philadelphia): We are indebted to Doctor Webb for a well timed reminder that the solution of the time-worn problem of adequate graduate medical education in America may no longer be delayed; has now become the subject of continuous, intelligent, constructive and united attack on the part of many progressive medical forces; and that the Medical Society of the State of Pennsylvania should play an important rôle in the whole movement. He has also made some striking suggestions as a contribution toward that rapidly increasing volume of proposals from which shall emerge a truly enlightened and competent plan of graduate medical education for the whole country.

The American Medical Association through its Council on Medical Education, committees representing a number of special medical societies, and about fifteen American university medical schools are already diligently at labor upon the problem individually and coöperatively.

It should be a matter of gratification to the members of the Medical Society of Pennsylvania that the University of Pennsylvania has been a pioneer in putting into actual operation a really adequate and comprehensive Graduate School of Medicine which is now about to enter its second session. The University will welcome any feasible plan of coöperation between its Graduate School of Medicine and the State Medical Society looking toward state-wide postgraduate medical work to be conducted at specially arranged dates, upon various subjects and at county medical and important hospital loci throughout Pennsylvania. May not the State Society, through designated officers or committees, soon initiate negotiations with the University which shall result in the beginning of an actual program of state-wide university extension postgraduate medical work in the winter of 1922-1923?

It is obviously impossible and undesirable at this time for me to attempt any citations of various plans of postgraduate medical work, or opinions as to their merits or faults. It appears, however, to be the time and place to make certain observations, as follows:

Graduate medical education is very expensive, and its growth in the state and university will necessitate an ever increasing monetary expenditure. Fortunately, this fact was appreciated by the last legislature and by the Governor. Due to the aid they extended through special legislation, the Graduate School of Medicine of the University of Pennsylvania has been enabled to continue its developmental program, which otherwise was threatened with cessation.

But money is not all. The state possesses already a wealth of potentialities for efficient graduate medical work. These potentialities should be marshalled, organized and brought to a condition of complete and coördinated activity in the premises. The most important of these potential graduate medical educational forces are the large group of higher grade hospitals throughout the state, and the eminent medical men of their staffs. It should be made clear to the managing boards of these institutions that hospitals are not simply hotels for the sick, where patients, physicians and nursing staffs meet under the most favorable circumstances.

Enlightened hospital staffs, who have always realized this truth, should actively impress upon their boards of management that it is an essential and important function of every high grade hospital to promote graduate medical education and research. It is true that this has been done in an insular and casual manner with regard to the clinical studies of chiefs, assistants and interns. But the casual and insular policy should yield to a policy of broad, definite and coöperative plans with the university as the central coördinating element therein.

The period before the great war was characterized by a rather slavish dependency on the part of America, in common with the rest of the world, upon Teutonic centers for graduate medical opportunities. It is inspiring to note that the tide is turning. For its session of 1921-1922, the Graduate School of Medicine of the University of Pennsylvania is receiving about eighty student physicians from all continents for serious work during periods ranging from one to three years. This is the type of men who formerly sought Vienna, Berlin, etc.

Let us hope the situation also indicates the passing of the former attempts to train "six weeks' specialists."

DR. WALTER F. DONALDSON (Pittsburgh): I do not speak officially for the Medical Society of the State of Pennsylvania, but I wish to relate briefly our experience this summer on a graduate program as an indication of the fact that not only are the officials of the State Society in full sympathy but also the rank and file of the more than seven thousand members of our society are distinctly interested in postgraduate work.

During this summer under the instruction of the Board of Trustees a sub-committee of the Committee on Scientific Work arranged to follow its program at four different points throughout the state. We deliberately chose points not easy of access, because we sought to reach men who could not come to our annual meetings on account of bad roads and inaccessibility of their localities. I will just detail to you our experience in one day's work. We took ten members of the Society, five of them teachers in the Medical Department of the University of Pittsburgh. We made a six hours' journey, that required a change of cars and a trip over a branch railroad, where the train goes in once a day and out once a day. There we were greeted by ninety-two physicians, from eight adjoining counties. Many of them having driven over roads accessible only during summer months. They were there with their note books. The subjects discussed by the men we took with us were well received. The audience did not take part in the discussion, possibly because they thought there was not the time to interfere, and possibly because they thought they were there to gain knowledge. That meeting continued from ten to one, and from two to five. We have heard nothing but praise for the addresses delivered that day, and the men who took part have been importuning us for another opportunity to continue the work, at the same place or at some other point.

The rank and file of our membership are anxious to get new ideas, and they will meet you half way. This means nothing to the program outlined by Doctor Webb or Doctor Meeker, but it indicates that the officers of the Society and the rank and file of the Society are in a receptive mood. Next year I am happy to say it will go forward on a more comprehensive program, and will occupy possibly two days, and I am sure it will lead on further. I will say to Doctor Meeker that we will certainly extend this feature and will call upon him for assistance.

Dr. William T. Sharpless (West Chester): I entirely agree with Doctor Webb as to the importance of establishing better facilities for postgraduate instruction and for bringing these facilities within the reach of the doctors of the state. I also agree with him that there is now in the hospitals throughout the state a great deal of good clinical material, that should be used for postgraduate instruction, which is now going to waste. I wish I could feel as sure as he does that there is a general desire on the part of the doctors in the state for this instruction. I am not familiar with conditions throughout the state but I assume that they are not very different from those in my home town. I live in a town of 12,000 people near Philadelphia where we have a good hospital. At all events it is on Dr. Baldy's approval list and we have a consulting physician who is not purely ornamental but who comes to the hospital every two weeks and makes the rounds in the medical wards and participates with the doctors on duty in the diagnosis and treatment of the cases. In other words he holds a ward class. The consulting physician is a man of large experience in clinical teaching and is connected with one of the medical schools of Philadelphia. The physicians of the neighborhood, whether they are connected with the hospitals or not, are informed of these classes. We believe they offer excellent facilities for postgraduate study and yet they are used to a surprisingly small extent by any physicians except those whose duty requires them to be present. There seems to be very little interest in these classes in our neighborhood, although we have taken some pains to make them popular.

Again, at our county society meetings we frequently have a clinical lecture delivered by the members of the hospital staff on the medical and surgical cases in the wards. These members of the staff, it is true, are not trained clinical teachers but the material they present is thoroughly worked up, on both the clinical and laboratory side, and is usually of great interest and offers very instructive features. With one exception these meetings are the worst attended by the members of the county medical society of any of its meetings. The exception rather emphasizes the point I am trying to make. The very worst attended of our meetings are the public meetings that are called at the instance of the State Health Department or of this Society for the purpose of enlightening the public on such matters as child-welfare, the prevention of tuberculosis, the early recognition of cancer, etc. Our men decline to attend these almost entirely. These meetings may be of great use to the public but they do not stimulate attendance at our county society meetings.

From what I have said I am convinced that it will be necessary to do more than offer improved facilities for postgraduate study. We shall be obliged, in the first place, to urge our members to use the clinical facilities that are now offered. We shall be obliged to urge upon them the importance of postgraduate study and the necessity for making some temporary sacrifices in order to obtain it. This work might properly be carried on through our county medical societies.

Dr. Martin T. O'Malley (Scranton): There is hardly any exception to take to Doctor Webb's paper. All he said I think will be fully endorsed. The purpose of my appearance is rather to supplement the point he made about inducing the University of Pennsylvania to extend its postgraduate plans to include the city of Scranton. I thought it might not be amiss—it is wholly impersonal—if you should know what we have been trying to do up there. We have in ten months of the year at least forty meetings at which we have a speaker. I don't know that any society is doing more than that in the state of Pennsylvania. I know many societies are not doing that much. We have weekly meetings. Three of the meetings a month are addressed mostly by outside speakers, and on the meetings of the month when we have a business meeting we also provide for some short program, usually by one of our members. In addition to the speakers we arrange, if possible, to have clinics.

Our experience, very fortunately, is not the experience detailed by Doctor Sharpless. I see faces here that have been welcomed in our society, and these men know the capacity of the society rooms is usually taxed on their appearance. Our average attendance has increased from thirty-five or forty at a meeting to more than seventy-five. On a recent occasion a Philadelphia speaker was greeted by an audience of nearly one hundred, which is practically half our membership.

In addition to that we have a monthly publication on which we are spending a lot of money. It costs a lot to issue that publication. Our Secretary is here, and I think he will tell you it costs nearly a thousand dollars a year. The purpose of that paper is to disseminate information among the members who cannot come to our meetings.

If every speaker who comes to our society is willing—unfortunately they sometimes do not live up to their promises—to furnish papers complete, or in abstract, we shall be only too glad to publish them. If an issue costs sixty or seventy-five dollars we are perfectly satisfied to spend it in order to print the paper complete as it is given to us by the speaker. We feel it is money well spent, and we know the papers will be read if the members can't come to the meeting. In addition we have a society within the society, I am speaking to the point of the evidence on our part of interest in having postgraduate instruction. Doctor Donaldson has told you what has been done in isolated sections. We have societies within the society, which form groups for study.

Our society stands behind Doctor Webb, in what he said with reference to the invitation to the University, and I am speaking only in order to present to you the evidence of our interest in the work of carrying out postgraduate instruction.

Dr. J. Quincy Thomas (Norristown): One word in reference to our state institutions that have locked up in them thousands of sick people that should be studied. In Norristown, at the State Hospital for the Insane, we have 3,000 insane patients. They are there with syphilis in all stages. We have clinical syphilis, Wassermann syphilis, colloidal syphilis. There is no one there to study them outside the staff. It seems to me if it could be arranged to use these state institutions for state pathological or clinical study (for instance, if a man like Doctor Daland should come up there and teach heart conditions) it would be of great benefit. If that were done we should have better doctors, we should have better patients and the public at large would receive the benefit.

Dr. Charles E. Thomson (Scranton): There was one thing about Doctor Meeker's discussion that did not please me, but perhaps I am a little too impetuous. If we older men are going to see any result from this movement we should like to get started in 1921, and not postpone it another year, as he suggested. *Now*, it seems to me, is the time when something should be done.

In reference to the last speaker's remarks I want to say that in long years of experience our state hospital has always manifested an interest to help us in any movements that we suggested. I don't believe that I could always be quite so enthusiastic about their medical staffs, but the hospital directors seem to be willing to comply with any reasonable request for coöperation that we brought before them; and I just want to say one word more (I am sure Doctor Webb is going to emphasize it in his summing up, and Doctor O'Mally has not covered it)—that we are anxious for this kind of coöperation with the University, and that personally I should like to see it started this year—*now*.

THE PERIL OF WOOD ALCOHOL TOXEMIA AND THE REMEDY*

S. LEWIS ZIEGLER, M.D.

PHILADELPHIA

Wood alcohol is recognized as the most deadly poison of commerce. Its manufacture should be strictly prohibited or its sale more stringently regulated by law. It is a protoplasmic poison, small doses destroying vision and larger ones menacing life itself. The port of entry is usually through the mouth but may be through the nose or skin. It has a selective affinity for the delicate nerve-tissues of the eye and probably for the pituitary body. Our intensive study should be directed to its toxic symptoms and their prompt alleviation before destructive corrosion of the neurons can occur.

In the recent past its cheapness has caused adulteration of pharmaceuticals, flavoring extracts and toilet preparations by the substitution of wood alcohol for grain alcohol. In Pennsylvania, we now escape this danger through the alertness of our Commissioner of Health, Dr. Edward Martin, who under the State Act of 1919 requires all manufacturers to file an affidavit as to the purity of their products, which he promptly confiscates in case this law is violated.

We are still exposed to the dangers of contraband liquors adulterated by profiteering bootleggers, "anti-freeze" mixtures for motor vehicles, "burning fluids" for the chafing dish and bath cabinet and the enormous output used in paints, varnishes, lacquers, dyestuffs, hats, patent leathers, shoe polishes, cements, rubber tires munitions of war etc.

Contraband liquors are, of course, beyond our control. The man who indulges in them knows full well that he is taking a gambler's chance on "blindness and death." After a wood alcohol spree we often note the newspaper report "two died and one went blind." But there is a ray of hope. Economic laws are surpassing human laws in solving this problem. Radical reductions in the cost of manufacture have changed the relative values. There has been a reduction during the past year of 100 per cent. in wood alcohol and more than 200 per cent. in denatured alcohol. At wholesale, ethyl alcohol now costs about $4.90 per gallon, wood alcohol costs 75 cents per gallon, while denatured alcohol costs only 40 cents per gallon. "Anti-freeze" mixtures and "burning fluids" are, therefore, being made from denatured alcohol because it is cheaper than wood alcohol, equally efficient and less damaging to motor engines. The largest hat maker in Philadelphia assures me that he has recently changed from wood alcohol to denatured alcohol and by so doing has eliminated the economic waste of "lost time" from toxic disabilities among his workmen, which had long been a serious handicap in such a big business. A leather manufacturer informs me that with a little more experimenting he hopes to completely eliminate wood alcohol from his factory. The painters still claim that they cannot get a good substitute for methyl alcohol to cut varnish and to remove paint, but they are convinced that a real danger confronts them and are earnestly studying the problem.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

We have, then, three strong factors working in our favor to cause the manufacturer to abolish wood alcohol and substitute denatured alcohol in its place: humanitarianism, self-interest and practical economy, but "the greatest of these virtues is practical economy," which may be itemized as follows:

1. The cost of material is cut in half since denatured alcohol is now 100 per cent. cheaper than wood alcohol.

2. The loss of time from toxic disability among employes is eliminated.

3. Compensation damages for physical injury are avoided.

The Internal Revenue Department allows the use of six general formulas for "completely denatured alcohol," containing 2 per cent. of wood alcohol or benzol and one-fourth to one-half per cent. of pyridin bases and benzine in each 100 parts of ethyl alcohol. There are also 40 formulas for "specially denatured alcohol" requiring "purchase permits" but covering every variety of chemical requirement. One of these formulas, however, has recently been withdrawn because there was evidence that unscrupulous chemists had been removing the denaturing element by fractional distillation and selling the alcoholic product for drinking purposes. A substitute for this formula (39.b.) containing 2.5 per cent. of diethylphthalate has just been promulgated (Sept. 23, 1921), "for use in the manufacture of perfumes, toilet waters, alcoholic barber's supplies and lotions." Diethylphthalate is colorless, odorless and miscible with alcohol, but is most unpalatable. Many painters are using the "C. D." formula No. 5, containing 2 per cent. of methyl alcohol, but most prefer the "S. D." formula No. 1, which contains 5 per cent. of methyl alcohol, and, therefore, cuts shellac somewhat better. The latter formula also finds favor with manufacturers of leather goods, lacquers, mirrors and cements.

There can be no doubt that the Government is doing all in its power to suppress the use of wood alcohol by encouraging manufacturers to try one of the many formulas for denatured alcohol, or if necessary by working out a new formula for them, especially adapted to their particular product. Nevertheless, so long as the public is exposed to the danger of this commercial poison cases of blindness and death are bound to ensue. I know of a recent case where a chauffeur purchased, on a motor spirit permit, one gallon of "C. D." No. 5, (a most nauseous compound) which he recklessly drank with disastrous consequences. I am convinced that wood alcohol should be wholly eliminated from denatured alcohol. So far as I can learn, wood alcohol must still be used in making explosives and dyestuffs, but I feel sure that human ingenuity could soon provide a substitute. Withot question, therefore, its manufacture should be abolished.

If, however, this radical action is too Utopian we should provide more stringent regulations for its sale: (1) by coloring it with methyl violet, as a warning to the eye; (2) by affixing a printed label conveying the warning, *"Poison!* Drinking, Breathing or Rubbing on Skin may cause Blindness or Death"; (3) by imposing a special revenue tax that would favor denatured alcohol; (4) by requiring a record of "poison sales" by both wholesalers and retailers so as to regulate its distribution and in cases of poisoning reveal its source and (5) by adopting the designation "Methanol," in order to eliminate the tempting suggestiveness of the word alcohol.

Circulars of information should also be issued to all the trades affected, calling attention to the grave danger of using wood alcohol, especially in varnishing tanks, closets or rooms where the air is confined, requiring proper ventilation of workrooms and ordering employes to seek the air at stated intervals of two hours.

As to the Pennsylvania State Act of July, 1919, Section 1 is most commendable since it prohibits the use of wood alcohol in internal remedies and external applications; but Section 2 specifically exempts veterinary remedies and medicated liniments. As all external applications of wood alcohol are extremely dangerous to vision, Section 2 should either be amended or entirely omitted. Section 3 provides a penalty of $500 for each violation of the Act and should, of course, be retained, although a prison sentence would prove more deterrent, if added.

The evidence is convincing that the port of entry is through the mouth nose and skin. Inhaling the fumes of wood alcohol or absorbing it through the skin may prove just as dangerous to life and vision as drinking it. The worst case of toxemia that I have treated was in a painter who inhaled the fumes for three days in a small, closed room. He was dizzy the first day, overstimulated the second and nervous the third. With this he suffered gastric pain and insomnia. Diplopia, ptosis and blindness soon followed.

The acute toxic symptoms are headache, dizziness, nausea, vomiting, abdominal pain, chilliness, leaky skin, cardiac weakness, slow pulse, sighing respiration, marked physical prostration, weakness of the extremities, delirium, convulsions, stupor and finally death. Loss of vision may be sudden and complete and is usually noticed on the second day when the stupor begins to wear off. At the end of a month there may be marked recovery, which either remains permanent or is followed by gradual failure and ultimate blindness. This history of sudden blindness associated with vomiting and abdominal pain is typical enough to make us suspect wood alcohol poisoning.

Briefly stated, the objective eye symptoms are a sluggish, well-dilated pupil, congestion of the sclera, tenderness of the eyeball, diplopia and sometimes ptosis. Wood alcohol workers acquire a certain tolerance but are liable to be laid off once a month by severe conjunctival irritation. Examination of the nervehead in cases of marked toxemia will reveal papillitis, sector-like atrophy or sudden sclerosis. Contraction of the fields and central scotomata usually occur.

In a paper read before the Oxford Ophthalmological Congress last year, entitled "The Ocular Menace of Wood Alcohol Poisoning," which will appear in an early number of the Journal of the American Medical Association, I stated my belief that "the primary and fundamental lesion in all cases of methylic poisoning is a *profound injury of the pituitary body*. The acute toxic symptoms are typical of such a lesion, while the chronic symptoms are equally significant. The changing but steadily contracting fields, the fugitive scotomata, the visual loss and recovery, the sclerosed or atrophic nerveheads, the fixed and dilated pupils, the temporary paresis of the extra-ocular muscles, the ptosis, the ataxic gait and the mental hebetude are all characteristic of pituitary involvement." I hope soon to place on record further confirmatory evidence on this point.

The bulk of the wood alcohol in the system is eliminated by the lungs, skin, kidneys and alimentary tract, while the remainder undergoes oxidation into formaldehyde and later into formic acid, both of which exert a corrosive action on living tissues. Even where small quantities have been absorbed, as by wood alcohol workers, there is enough formic acid excreted in the urine to promptly reduce Fehling's solution. This fact is of great importance to the internist as the inexperienced might suspect the presence of sugar and falsely diagnose diabetes, especially if there were associated ocular lesions. Moreover, in marked methylic toxemia we may have the Kussmaul type of breathing, which would add to the confusion in diagnosis.

Since acidosis is a constant factor in the early stages intravenous injections of sodium bicarbonate should be promptly given, the indications being governed by Van Slyke's test for the carbon dioxide in the blood, always remembering that excessive alkalosis may cause grave irritation of the kidney. On the other hand, I found in the later stages of one of my cases a marked alkalosis of 113 per cent., which promptly yielded to treatment. In mild cases of toxemia sodium bicarbonate, gr. xx should be given every two hours. Donovan's solution, m.x., t.i.d. will prove most efficient as an active eliminant. Pilocarpin will stimulate lymphatic activity.

Additional eliminative treatment in the shape of lavage, emetics, diaphoretics and rapid oxidation has proved of great value. As the endocrine secretions are greatly interfered with the exhibition of thyroid extract and pituitrin will overcome the physiologic insufficiency. The optic nerve should be stimulated by applying negative galvanism. Strychnin has not proved successful in my hands.

A practical method for the testing of suspected liquids for wood alcohol has been devised by the Chemist to the Department of Public Health of Philadelphia, Dr. William C. Robinson. He converts the wood alcohol by oxidation through potassium permanganate into formaldehyde, then adds it to acidulated milk and gently heats until a pink color develops. This test is so delicate that 1-100 of 1 per cent. of methyl alcohol will be revealed. I should strongly advise that all suspected liquids be placed in his hands for test prior to use. Danger may lurk in "foreign importations" and even "homebrew" is not above suspicion.

QUANTATIVE TEST

1. Take 100 cc. of the suspected methylic liquid and add sodium carbonate until it becomes alkaline.
2. Dilute this with an equal volume of water.
3. Then distil the solution.
4. Cool 100 cc. of the distillate to 60° F. and take the Sp. Gr.
5. Compare Sp. Gr. with tables to estimate percentage of alcohol by weight and volume.
6. Pour distillate into a Zeiss Immersion Refractometer and compare scale reading and reference table to ascertain whether pure ethyl alcohol, pure methyl alcohol, or a mixture is present.
7. If both are present, obtain percentages of each by applying an empiric formula (See Fourth Edition of Leach's "Food Inspection and Analysis," p. 782. Table appears below.)

QUALITATIVE TEST

8. Redistill the remaining 100 cc. of distillate (para. 4 above).

9. Take the first 10 cc. coming over and add 3 cc. of 1 per cent. solution of potassium permanganate.
10. Gently heat to 110° F. and constantly agitate the vessel until the odor of ethyl aldehyde is perceptible.
11. If the solution decolourizes add more permangante solution, 1 cc. at a time, until pink color is restored.
12. Add a few drops of commercial muriatic acid to precipitate the excess of permanganate (as brown manganese hydroxide) and filter.
13. Pour the colorless filtrate into a porcelain casserole and add 10 cc. each of water, fresh milk and muriatic acid.
14. Heat mixture to the boiling point with constant agitation until a bright permanent pink develops, which will occur if only 1-100 of 1 per cent. of wood alcohol is present in the suspected liquid.

For an emergency inspection we can modify the quantitative test outlined above by omitting the distillation. The suspected methylic liquid is thus poured directly into the hygrometer and Zeiss refractometer, and readings of specific gravity and percentages compared with reference table and empiric formula (as in Nos. 5, 6 and 7). This will roughly show the relative amounts of ethyl and methyl alcohol present.

SCALE READINGS ON ZEISS IMMERSION REFRACTOMETER AT TWENTY DEGREES C., CORRESPONDING TO EACH PER CENT. BY WEIGHT OF METHYL AND ETHYL ALCOHOLS

Per Cent. Alcohol by Weight	Scale Readings		Per Cent. Alcohol by Weight	Scale Readings		Per Cent. Alcohol by Weight	Scale Readings		Per Cent. Alcohol by Weight	Scale Readings	
	Methyl Alcohol	Ethyl Alcohol		Methyl Alcohol	Ethyl Alcohol		Methyl Alcohol	Ethyl Alcohol		Methyl Alcohol	Ethyl Alcohol
0	14.5	14.5	26	30.3	61.9	51	39.7	91.1	76	29.0	101.0
1	14.8	16.0	27	30.9	63.7	52	39.6	91.8	77	28.3	100.9
2	15.4	17.6	28	31.6	65.5	53	39.6	92.4	78	27.6	100.9
3	16.0	19.1	29	32.2	67.2	54	39.5	93.0	79	26.8	100.8
4	16.6	20.7	30	32.8	69.0	55	39.4	93.6	80	26.0	100.7
5	17.2	22.3	31	33.5	70.4	56	39.2	94.1	81	25.1	100.6
6	17.8	24.1	32	34.1	71.7	57	39.0	94.7	82	24.3	100.5
7	18.4	25.9	33	34.7	73.1	58	38.6	95.2	83	23.6	100.4
8	19.0	27.8	34	35.2	74.4	59	38.3	95.7	84	22.8	100.3
9	19.6	29.6	35	35.8	75.8	60	37.9	96.2	85	21.8	100.1
10	20.2	31.4	36	36.3	76.9	61	37.5	96.7	86	20.8	99.8
11	20.8	33.2	37	36.8	78.0	62	37.0	97.1	87	19.7	99.5
12	21.4	35.0	38	37.3	79.1	63	36.5	97.5	88	18.6	99.2
13	22.0	36.9	39	37.7	80.2	64	36.0	98.0	89	17.3	98.9
14	22.6	38.7	40	38.1	81.3	65	35.5	98.3	90	16.1	98.6
15	23.2	40.5	41	38.4	82.3	66	35.0	98.7	91	14.9	98.3
16	23.9	42.5	42	38.8	83.3	67	34.5	99.1	92	13.7	97.8
17	24.5	44.5	43	39.2	84.2	68	34.0	99.4	93	12.4	97.2
18	25.2	46.5	44	39.3	85.2	69	33.5	99.7	94	11.0	96.4
19	25.8	48.5	45	39.4	86.2	70	33.0	100.0	95	9.6	95.7
20	26.5	50.5	46	39.5	87.0	71	32.3	100.2	96	8.2	94.9
21	27.1	52.4	47	39.6	87.8	72	31.7	100.4	97	6.7	94.0
22	27.8	54.3	48	39.7	88.7	73	31.1	100.6	98	5.1	93.0
23	28.4	56.3	49	39.8	89.5	74	30.4	100.8	99	3.5	92.0
24	29.1	58.2	50	39.8	90.3	75	29.7	101.0	100	2.0	91.0
25	29.7	60.1	....	......	......	....	......	......	....	......	......

In closing I will simply repeat the summary of my former paper, previously referred to:

IN CONCLUSION

"1. Wood alcohol is the most deadly poison used in daily commerce.

"2. One teaspoonful has been known to cause blindness and one ounce to cause death.

"3. The port of entry may be through the mouth, nose or skin.

"4. Wood alcohol should be identified by Robinson's test.

"5. It is a protoplasmic poison possessing a selective affinity for the delicate nerve tissues of the eye.

"6. Its biochemistry is modified by oxidation, first to formaldehyde and then to formic acid, both of which are corrosive poisons.

"7. Formic acid is the end-product excreted by the kidneys.

"8. If formic acid is present in the urine it will promptly reduce Fehling's solution, thus suggesting to the inexperienced a false diagnosis of diabetes.

"9. Van Slyke's test will reveal acidosis in the early stages and alkalosis later.

"10. Sudden blindness with vomiting and abdominal pain should always arouse suspicion of methylic poisoning; especially if diplopia or ptosis is associated.

"11. Papillitis, sector-like atrophy and sudden sclerosis of the nervehead are equally typical fundus lesions.

"12. Symptoms of pituitary injury are most suggestive in pointing to this as the primary and fundamental lesion.

"13. Contracted fields and central or paracental scotomata are usually present.

"14. Treatment should include early neutralization of alkalies, elimination by lavage, emetics, diaphoretics and rapid oxidation, together with stimulation of the optic nerve by negative galvanism applied directly to the eye. Thyroid extract and pituitrin may be indicated. Pilocarpin and Liquor Donovani will stimulate lymphatic activity.

"15. The manufacture and sale of wood alcohol should be prohibited or regulated by law.

"16. If sales are permitted, safeguards and warnings should be required and the public instructed as to the great danger to vision and life.

"17. A special revenue tax with registered 'Poison Sales' would regulate and record its distribution and in cases of poisoning reveal the source.

"18. This tax should equalize the cost of denatured alcohol and methyl alcohol, and thus remove the temptation to adulteration because of cheapness.

"19. All wines, whiskies, toilet articles and patent medicines imported from foreign countries should be tested for wood alcohol before passing through the Customs inspection.

"20. The name 'Methanol' specifically designates this product and yet avoids the tempting suggestiveness of the word 'alcohol.'"

DISCUSSION

Dr. James M. Anders (Philadelphia): It seems to me Doctor Ziegler is to be congratulated upon the fact that he has made a careful and thorough study of the subject of wood alcohol toxemia. As all progressive physicians know, the enforcement of national prohibition was promptly followed by the reporting of many deaths and many more cases of blindness from the ingestion of methyl alcohol. The selling of wood alcohol as a beverage is a criminal offense, at least in this state; and I, for one, think that all offenders in this direction should be promptly prosecuted. On the other hand wood alcohol can be manufactured in unlimited quantity, and it can be so prepared as to be indistinguishable from ordinary alcohol by ordinary methods. Men who have formed the alcohol habit, therefore, drink it as whiskey or gin, and they sometimes do this knowingly, but they are often unaware of the fact that it is, as Doctor Ziegler said, one of the most deadly poisons of which we have knowledge. In view of this fact it seems to me it is clearly the duty of the medical profession to fully inform the public of the danger to health, to vision, aye, to life, of those who use it. It is also widely used as an adulterant of ordinary whiskey and gin, so that unquestionably, John Barleycorn, the former friend of many, is no longer entitled to perfect confidence.

The chief effect of wood alcohol, as pointed out by Doctor Ziegler, is blindness from optic atrophy. Whether these changes are due primarily to damage sustained by the pituitary body, as Doctor Ziegler claims, I am not prepared to say; but certain it is that the clinical phenomena of these two conditions, wood alcohol poisoning and pituitary disease, resemble one another in certain particulars at least.

In addition the pathology of acute poisoning with wood alcohol—and this is an important matter for us clinicians to remember—is that of an intense gastro-intestinal congestion; and it is an interesting fact that when the victim's stomach and bowels are laid open after death there is emitted a characteristic methyl alcohol odor.

Now, as Doctor Ziegler said, the diagnosis of wood alcohol poisoning is easy when there is a clear history plus the manifestations of ocular disturbance, but so far as my observation has extended a clear history is too often lacking. It is therefore high time, it seems to me, for the medical profession to become thoroughly acquainted with the symptomology of methyl alcohol poisoning, so that it may be recognized in its earlier stages when something may be done for the patient.

The symptoms vary in degree from those of a mild general toxemia to severe prostration, with marked cyanosis, dilated pupils, hurried respirations, rapid feeble pulse, lowered temperature, followed by coma and death. In the milder intermediate cases, in which something may be done if taken sufficiently early, we have gastro-intestinal symptoms such as vomiting and purging, the patient feels weak and exhausted and, as a rule, about the time these evidences of toxemia are subsiding there is a diminution of vision, which too often goes on to complete blindness.

In all doubtful cases of wood alcohol poisoning, it is important to examine the urine for formic acid, which is an excretory product of wood alcohol, as we all know. Formerly, it was customary to advise that this test, somewhat complex, be carried out by a chemist, but the Robinson test, to which Doctor Ziegler referred, is at one and the same time more delicate and more simple. It is one that can be carried out by any expert clinical laboratory worker. I mention this matter again because it seems to me it is a matter of utmost importance to get a prompt report from the laboratory in all doubtful cases of methyl alcohol poisoning in order that our diagnosis may be completed as early as possible.

The treatment, as Doctor Ziegler has well said, is most unsatisfactory. When seen early, however, the important thing is to cleanse the gastro-intestinal tract as speedily as possible by means of gastric lavage, castor oil and enemata.

The patient's death in fatal cases is due in great part at least to acidosis. We should, therefore, adopt the method of Harrop and Benedict, who administer intravenous injections of a 5 per cent. sodium bicarbonate solution, 500 cc., repeated in twelve to eighteen hours. When the stage of unconsciousness and coma has been reached active stimulation is indicated.

For the eye condition little or nothing can be done. I do think, however, that the suggestion of Lambert is worthy of remembrance and employment. He recommends the use of potassium iodide and pilocarpin internally, together with sweat baths for their eliminating effect. Later, to limit the optic atrophy he strongly advises the use of strychnia sulphate hypodermically.

I close as I began, by saying that this subject is a most timely and highly important one, and that Doctor Ziegler is to be congratulated upon his excellent presentation, which deserves to be widely read.

Doctor Ziegler (in closing): I have just a few words to add. As stated in my paper the use of strychnin sulphate has not proved successful in my hands, but negative galvanism has proved very satisfactory to stimulate the optic nerve. The most obstinate cases improve as to central vision but not so much as to widening of the fields. There is destruction through a corrosive action on the nerve fibers, and if the nerves are destroyed there can be no restoration by galvanism, as cases cited in my former paper will illustrate. I believe that Donovan's solution (arsenous and mercuric iodide). is superior to the iodide of potassium in these cases.

The solution of our problem is dependent upon whether wood alcohol shall be wholly abolished or not. So far as its control is concerned the economic laws are now working in our favor, and I think they will eliminate a great part of the trouble. In other words, there will not be so great an exposure to the poison because less of it is being sold. The danger, however, is just as great, and its distribution should be carefully watched and controlled.

MECHANICAL ASPECTS OF ACQUIRED CHRONIC VALVULAR HEART DISEASE*†

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It may be possible that during the course of chronic valvular disease the rôle of the heart muscle is at times overshadowed by certain mechanical factors which result from the disturbance of anatomical relationships. Electrocardiograms of certain individuals with chronic valvular disease (especially in those before the age of 40) may reveal none of the characteristic alterations which are commonly thought to be indicative of gross muscular change, the only finding in many cases being a preponderance of one or other ventricle; furthermore electrocardiograms do not always reveal sufficient damage to myocardium to account for death on that basis alone. The attempt will be made to correlate clinical findings with possible disturbed anatomical relationships.

At the outset it is necessary briefly to consider the relationships of various parts of the heart. It is suspended in the mediastinum largely by two important structures: (a) the pretracheal layer of the cervical fascia which descends into the chest, enveloping in its descent the thyroid gland, left inominate vein, the aortic arch and finally fusing with parietal pericardium both anteriorly and posteriorly; (b) the left bronchus over which the aortic arch is hooked.

The base of the heart is definitely fixed in the transverse position by other mediastinal structures. The left auricle is firmly enclosed in relatively small confines, being bounded posteriorly by the vertebral column, descending aorta and oesophagus; anterosuperiorly by the ascending aorta, pulmonary artery and the left coronary artery; laterally by the pulmonary veins and hilus of each lung. The left auricular appendage projects anteriorly and to the left and is in close relation to the pulmonary artery and overlaps the left coronary artery. The right auricle is fixed in the vertical plane by the superior and inferior caval veins, medially it is bounded by the ascending aorta, laterally it is in relation to the right phrenic nerve.

The ventricles are relatively mobile, being attached both to the auricles and great vessels arising from the base of the heart and bounded laterally by soft lung tissue, the left ventricle occupying the cardiac notch of the left lung. They are bounded anteriorly by the chest wall. Enlargement anteriorly is thus limited and in the presence of marked hypertrophy rotation takes place. When the ventricles alone are enlarged, very few structural symptoms, i. e., those depending for their production upon disturbed anatomical relationships, are present. On the other hand, when disturbances are present in the auricles, pressure, direct or indirect, may disturb the function of the surrounding structures and give rise to many of the signs and symptoms fond in chronic valvular disease.

DISEASE OF AORTIC VALVE

Disease of the aortic valve is usually well established before discovery, possibly because the left ventricle may undergo marked hypertrophy without causing pressure signs, as the left lung and chest wall are the only structures pressed upon and the chest wall is avoided by rotation. Aortic valve disease, in absence of marked damage to kidneys or other vital organs, is a comparatively benign condition. Death by heart failure usually results from the association of mitral disease, fibrillation, or damage in other organs, the same etiological factors being responsible. The first signs of aortic insufficiency may be dyspnea, pallor, violent throbbing in the neck, attacks of precordial pain on exertion. Dyspnea and pallor may be due to the decreased volume output of left ventricle and the physiological increase of respiration as the result. A diminished blood supply to the respiratory center may be an additional factor in the production of dyspnea.[1] According to Eppinger and Schiller,[2] acidosis may be considered an unlikely factor in the absence of renal or other changes. Headaches, dizziness, ringing in the ears, throbbing in the neck and mental symptoms are commonly thought to be due to cerebral anemia.

PAIN IN AORTIC DISEASE

It is a well-known clinical truth that pain is much more frequent in aortic than in mitral disease. The greater pain in aortic disease may possibly be due to the fact that both coronary arteries are involved, as they arise from the aortic sinuses, which are in close relationship with the aortic valve itself. Pain may be due to the sudden collapse of the coronaries and vessel wall spasm, or it may be due to overdistension of coronaries, causing pressure upon the accompanying nerves. The process is con-

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sidered by some to be the same as met with in any smooth muscle spasm, e. g., biliary or renal colic, the sympathetic innervation passing reflexly through cord, the visceral fibers forming synapses in the various parts of the gray matter of each segment.

Dropsy is not found in uncomplicated aortic disease as there is no anatomical reason for its occurrence. When it occurs in absence of cardiac enlargement, Mackenzie[1] believes it is probably not of cardiac origin. He also doubts the existence of urinary signs of heart failure in the absence of dilatation; there is no anatomical basis for such manifestations. Cough, hemoptysis, liver enlargement and general anasarca do not occur, except with coincident mitral involvement which is relative or due to actual damage to valve. At times the presence of auricular fibrillation with aortic insufficiency may obscure the mitral valve element.

AORTIC STENOSIS

When occurring without marked insufficiency this is comparatively benign. There may be no symptoms for many years. The signs and symptoms commonly considered to be indicative of heart failure are usually due to the presence of other disorders, as the only mechanical influence may be a hypertrophied left ventricle which develops slowly and is not associated with marked dilatation unless incompetency also be present. This hypertrophy eventually gives way to extreme dilatation, resulting in relative mitral incompetency with its sequalæ.

When hypertrophy and dilatation of left ventricle have reached a certain stage in aortic disease it is well known that the left auricle becomes involved. This has been commonly accepted as a classical example of so-called back pressure. As was pointed out previously, the left coronary artery is in very close relationship to the left auricle. It is reasonable to think that pressure is made upon this vessel which supplies the heart muscle itself. May not the further dilatation and damage of the heart muscle be due directly to this impairment of nutrition? The acceptance of such a factor would do much to clear up the cause of progressive muscular damage, the myocardial changes being secondary to a mechanical condition whose progress cannot be stopped after a certain amount of damage has been done, i. e., after the left ventricle becomes large enough to cause pressure on the left auricle. It is realized that the concomitant valvular and muscular changes may be due to the same etiological factor; nevertheless, it is believed that there are many instances in which the muscle changes may be very much aggravated by definite mechanical conditions and that in such cases the rôle of the myocardium is secondary.

MITRAL STENOSIS

Patients having mitral stenosis often show a much more varied symptomatology and many more physical signs than patients with uncomplicated aortic disease, because involvement of the auricles usually is more extensive and consequently the variations in mechanics from the normal are greater.

In mitral stenosis the left ventricle is small but the enlargement of the left auricle is one of the principal changes. The musculature of the auricle is comparatively thin. Marked hypertrophy does not occur but dilatation rapidly takes place after increased intra-auricular pressure and without doubt the mechanical influences overshadow the importance of the heart muscle in many instances. A great many pressure symptoms may be assigned to enlargement of the left auricle.

(a) Pressure on left pulmonary veins may produce left-sided pleural effusion.

(b) Marked enlargement of left auricle may cause narrowing of the four pulmonary veins, producing bilateral pleural effusion.

(c) Mechanical damming back of blood into pulmonary veins may cause congestion of the lungs and hemoptysis.

(d) Pressure on the coronary arteries interferes with the nutrition of the heart muscle itself, which explains the more rapid progress of mitral stenosis as compared with mitral insufficiency.

(e) Pressure on the accompanying nerves of the left coronary artery, which are derived from the superficial and deep cardiac plexuses, may conceivably give rise to a sense of oppression and vague pain over precordium and stitch-like pains in region of the apex.

(f) Pressure on left recurrent laryngeal nerve may cause aphonia.[3]

(g) Pressure on bifurcation of trachea may cause brassy cough.

(h) Pressure on oesophagus may cause dysphagia.

(i) Pressure on phrenic nerve may cause hiccough.

General anasarca due to venous engorgement is rare because in mitral stenosis with enlarged left auricle the inferior vena cava is not interfered with. Where, however, a combined lesion is present, enlargement of the right ventricle may result from back pressure into the pulmonary arteries and tricuspid insufficiency may develop; dilatation of the right auricle may occur with subsequent damming back of blood into the great veins with enlargement of the liver followed by ascites. The enlarged liver precedes the ascites because the hepatic veins situated closer to the heart first become engorged and the liver becomes the reservoir of heart before there can be any demonstrable ascites.

Where the right ventricle is enlarged there may be mechanical displacement of the left ventricle further to the left and the right auricle rotates further to the right at the same time. This may cause constriction of the inferior cava at its entrance to the right auricle with consequent water-logging of the parts drained by this large vessel.

Right sided pleural effusion may occur in the presence of enlarged right heart owing to the following mechanical factors:

(a) Heart is enlarged in the transverse plane with a pulling down of the superior cava, which thus constricts the vena azygos major as it loops over the right bronchus.[4]

(b) By direct pressure of the right heart on the right lung root and indirectly pinching the vena azygos major, as it curves over right bronchus to enter superior vena cava.[5] [6]

(c) The enlarged right heart may make pressure on the left auricle and the lower right pulmonary vein, which is the most anterior structure of the right lung root.[7] [8]

MITRAL INSUFFICIENCY

In certain stages of mitral insufficiency without marked stenosis the left ventricle is enlarged less than the right ventricle and the size of the left auricle is practically unchanged. This valvular lesion is commonly recognized as having the least unfavorable prognosis. This is possibly due to the fact that mechanical changes are very small in this type. Dyspnea on exertion may be due to the general lack of oxygenation of blood during increased effort, the volume of output at each beat being smaller than normal. May not the increased respiration be a physiological attempt to bring about better aeration? When decompensation occurs the signs and symptoms may well be explained on the basis of back pressure.

Pain is rare in mitral insufficiency unaccompanied by stenosis because there may be very little change in left auricle and therefore no pressure on the left coronary artery and its accompanying nerves.

AURICULAR FIBRILLATION AND MITRAL DISEASE

It is very well known that auricular fibrillation is very commonly found in association with mitral disease. In this disturbance of mechanism the pacemaker does not function. This structure is imbedded in the sulcus terminalis which lies upon the posterolateral surface of the right auricle, passing from the superior to the inferior vena cava and lies in direct relation to the left auricle and the orifices of both right pulmonary veins. May not the purely mechanical factors of pressure at times have a certain part to play in the production of this disturbance of mechanism?

VALUE OF X-RAY FINDINGS

The foregoing anatomical and clinical considerations appear to be corroborated by fluoroscopic findings in living patients, as summarized from the work of Vaquez and Bordet.[9]

According to these investigators, the image of the normal heart in the frontal position is as follows: Right ventricle occupies greater part of frontal aspect. It is bounded above and at right by the auriculo-ventricular groove which separates it from the right auricle, which constitutes the upper two-thirds. On the left the anterior interventricular groove bounds on the outside a narrow band of the left ventricle from the base to the apex. At base the aorta and pulmonary artery are present. Normally the structures on the right are as follows: In the second interspace, ascending aorta and superior vena cava; in third interspace, right auricle; in fourth interspace, right ventricle. On the left in first interspace, arch of aorta; in second interspace, pulmonary artery below which is left auricle; in third, fourth and fifth interspaces, the left ventricle.

In aortic incompetency without serious decompensation fluoroscopic examination shows that the shadow of the heart occupies a somewhat median position and that the apex, which is lowered, is pushed only slightly outward. Contour of left ventricle is elongated, convex, not exaggerated. Right contour is normal. The longitudinal diameter exceeds the normal and the horizontal diameter is decidedly less. This is the picture without involvement of other cavities. Sometimes the hypertrophy of the left ventricle is very slight. On the contrary many cases of aortic insufficiency, however well compensated, are accompanied by considerable ventricular hypertrophy. As has been stated previously, the combination of aortic insufficiency and mitral stenosis is more serious than the presence of aortic insufficiency alone. The fluoroscope renders valuable assistance in determining whether a mitral lesion is present, as the left auricle is usually normal in aortic insufficiency alone but is always increased in mitral stenosis of a moderate degree.

In aortic stenosis the fluoroscopic findings are somewhat similar to those in aortic incompetency and it is to be remembered that if no lesion in the aorta is present there may be no signs of cardiac insufficiency.

Radiograms of mitral insufficiency without any marked circulatory disturbance resemble somewhat the normal horizontal heart. Development is exaggerated on the right. Contour of the left ventricle is normal. The apex is pushed outward, is rather pointed and not lowered. The transverse enlargement of heart is due to development of the right cavities. Left ventricle is enlarged less than the right. The left auricle may not appear to be changed. Ventricles are accentuated when mitral insufficiency is complicated, as for instance, if fibrillation be present, transverse enlargement may be considerable.

In mitral stenosis radiograms show left median aorta plus, especially in portion corresponding to left auricle. The left ventricular outline is of slight dimension. The convexity is not so marked as in the normal. The apex takes on a pointed appearance. The right contour is very noticeable beyond right edge of sternum. Inferior vena cava is often more visible than in the normal. In the normal, left outline is greater than right, whereas in slight mitral stenosis the left but slightly exceeds, equals or is even less than the right outline. Longitudinal diameter is usually exaggerated. Horizontal diameter is always much less than longitudinal. The heart is lowered and at the same time undergoes displacement from right to left, from behind forward, so that the right cavities are slightly raised toward the sternum and the right curve of the heart must necessarily be raised in the upper part to the level of the large vessels as well as in the diaphragmatic position and shows an exaggerated development outside of sternum. Thus in mitral stenosis the heart undergoes a slight downward displacement, a movement downward which forces apex below normal position and a see-saw movement which pushes the right auricle to the right without a real enlargement of that cavity. Enlargement of the left auricle is one of the principle changes in mitral stenosis and the auricular appendage is compressed by the hypertrophied auricle. The lowering of the heart puts tension on vessels. The outline of the pulmonary artery is more rectilinear. The under-development of left ventricle makes projection of pulmonary artery and left ventricle more apparent. When the left auricle is dilated or hypertrophied the shadow approaches or merges into that of the vertebral column.

THE VALUE OF ELECTROCARDIOGRAMS

Electrocardiograms in the cases under consideration are of value chiefly from a negative standpoint. The assumption of a predominating mechanical influence in the production of decompensation may be more safely made when the tracing shows no evidence of the changes commonly regarded as indicative of gross muscular damage. Variations in height and width of the P wave, especially when associated with notching, are considered to be indicative of changes in the auricle. In these cases the elecrocardiogram may be practically normal with the exception of preponderance of one ventricle or the other and a variation of the P wave if mitral disease be present; in our present state of knowledge neither of these changes is regarded as indicating severe myocardial damage. When, however, gross defects, such as branch bundle lesions, are found, it is apparent that the mechanical aspect is secondary in importance.

AID IN PROGNOSIS

In prognosis we can be very greatly assisted by considering the mechanical aspects along with damage to the myocardium. If evidences of both be present, prognosis is necessarily more serious. If the patient be suffering, however, from an uncomplicated aortic regurgitation and if it is found that there is only moderate hypertrophy of the left ventricle, a brighter outlook can be promised. If the lesion is found to be a mitral insufficiency without marked stenosis the best prognosis in any of the chronic valvular lesions may be given with considerable assurance. When the late evidences of mechanical pressure are present, as for instance, edema of the extremities in a patient who is primarily suffering from mitral stenosis, we can be fairly certain that the end is not far removed. The same holds true in cases where the lesion was primarily aortic insufficiency, as the anatomical explanations show that this sign is found only in advanced cases.

In considering prognosis of chronic valvular lesions it must be remembered, however, that 60% or more of the patients who show the extreme signs of decompensation and irregular pulse have auricular fibrillation, a condition in which during the untreated stage we have a very inefficient mass movement of blood. When the ventricles are slowed many of the signs and symptoms disappear very quickly.

In many instances a patient having mitral stenosis and decompensation without the presence of auricular fibrillation may not respond to treatment nearly so promptly nor so thoroughly as a patient having mitral stenosis and auricular fibrillation. The question naturally arises as to the mechanical differences between fibrillating auricles and those having a sequential diastole and systole. It would be confirmatory of the importance of pressure in the auricular region if it were found that, the rate of the ventricles not being excessive, the auricles during fibrillation have a somewhat smaller volume than during certain phases of the ordinary auricular cycle. So far as known, no observations along these lines have been made.

COMPENSATORY POSTURES

Patients having considerable enlargements of the various chambers of the heart assume various postures in an attempt to utilize every available bit of intrathoracic space. Some of them are definitely more comfortable in the sitting posture because the abdominal contents are compressed, the diaphragm is pushed up and the heart assumes a more horizontal angle. Some secure additional space by leaning forward on abducted elbows. Some choose lying on one side in preference to the other, very often extending the homolateral arm; the head and chest may or may not be elevated at the same time. Some find comfort only when prone. Some beg to be allowed to stand upright to get a few moments relief. After a patient has found that he is more comfortable in one position than in another he will maintain it as long as possible.

In patients with protracted courses pressure sores may be seen in unusual regions, for example, over the patellæ. In such instances one is almost positive that mechanical embarrassment overshadows the rôle of the heart muscle during a great part of the terminal stage.

SUGGESTIONS FOR TREATMENT BASED UPON MECHANICAL CONSIDERATIONS

When the patient's optimum position has been found he will assume it of his own accord while rational and awake and it will be found that he can fall asleep only in the same position. If delirious or asleep he may alter his position and invariably becomes very much more uncomfortable; therefore delirious and sleeping patients should be maintained in the optimum position by propping them with pillows (due consideration must, however, be given to the possibility of hypostasis of the lungs). It is believed that many attacks of nocturnal dyspnoea, precordial pain, cough, palpitation, etc., are due to a change in position while asleep, especially in those patients who do not have similar complaints during the day.

Patients with a degree of compensation which permits moderate exertion should be instructed to assume their optimum position immediately after any fatiguing effort as they obtain relief more quickly than if they are left to shift for themselves. By this procedure the intervals of possible mechanical embarrassment to the heart muscle may be distinctly shortened.

My observations on the influence of various postures are naturally far from complete as the possible combinations of mechanical disturbances are very numerous, yet in certain instances it has been possible to make a tentative diagnosis merely by observing the position of the patient or by asking him in which position he found himself (a) immediately upon awakening from a refreshing sleep, (b) immediately after being awakened by dyspnoea, palpitation, precordial pain or cough.

Comment: If it be true that in certain patients with chronic valvular heart disease the ultimate outcome depends upon mechanical disturbances which inevitably wear out heart muscle and cause lethal changes in other organs it would seem reasonable that an attempt should be made to diminish such mechanical disturbances. Cardiac decompression by surgical procedures may possibly be of value when it appears certain that mechanical embarrassment outweighs the rôle of the heart muscle. Does nature provide us with a portion of the heart uncovered by lung as a reserve against increased pressure? Could this reserve be increased by removal of the bony framework over the superficial cardiac area? Does nature deform the chest of a child with chronic valvular heart disease to relieve cardiac pressure or is the bony frame-work in its normal condition an additional safeguard? These appear to be definite problems awaiting solution and the only excuse for mentioning them while my work is in an embryonic state is to enlist the aid of more experienced clinicians and more expert laboratory workers in solving this complex matter.

(I wish to express my appreciation to Dr. H. N. Malone for assistance in the anatomical laboratory.)

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DISCUSSION

Dr. George W. Norris (Philadelphia): I feel rather apologetic, not only about appearing before you twice in such rapid succession, but also because I have had so little time to think about the paper just presented. There are, however, certain things that have been stated with which I cannot agree. Of course, there is little question that the mechanics of heart disease plays a considerable rôle; and when I was a medical student, it was the only rôle emphasized. I have done a considerable amount of work, in combination with Dr. Fetterolf and others, in figuring out the mechanics in disease of the heart and lung; so I do not underestimate the importance of these factors. Yet it does seem to me that to-day we have advanced beyond that stage, and that the emphasis, by those who have thought on the subject, is now placed on the chemical factors, these being influenced by the microscopic condition of the myocardium. The French say that "a disease of the valves, is not a disease of the heart," thus epigrammatically emphasizing a point that needs emphasis. They mean that in valvular cases the patients get along well as long as the myocardium is good, but that as soon as the myocardium becomes diseased, various symptoms develop. So it seems to me that we must pay more attention to the myocardium than to purely mechanical factors.

Thus the question of the posture which is assumed by the patient was alluded to. Unquestionably, the patient assumes the posture that best enables him to perform his functions of respiration and circulation. As to the explanation, it is not so simple as some think. Anyone who has followed the recent literature written by a number of men on the chemistry of respiration must realize that the chemical factor in respiration is very important, and that the things we have been attributing more to the mechanical distribution of the blood have really a chemical origin. The old teaching was that a man breathes better when sitting up, because the diaphragm is low and he has more room for air in the chest. That is probably true, but it is not the sole factor, as Dr. MacLeod, who will speak later, will tell you. So it is useless now to enlarge upon the subject. The whole question of edema, etc., is only in part mechanical.

Dr. Lawrence Litchfield (Pittsburgh): I have had the pleasure of reading Dr. D'zmura's paper; and it is indeed a very conscientious and praiseworthy piece of work. I wish only to mention two points that seem to me to be rather lost sight of in the paper.

In the first place, any attempt to locate the heart with such precision, and to draw conclusions regarding mechanical embarrassment from position, I think, is to exaggerate the importance of this factor. The position of the heart is so dependent on the environment of the heart, the position of the diaphragm, the condition of the neighboring lung. The facility with which the displaced heart can do its work is so great that we cannot draw too far-reaching conclusions from slight changes in position. I recently had that illustrated by a case in Pittsburgh, in which, during a right lower or middle lobe pneumonia with a moderate pleural effusion, the patient was submitted to fluroscopic and radiographic examination, with the result that no heart shadow could be seen to the left of the sternum. The case went through an uneventful course; and during convalescence the radiographer invited some friends to see the case of dextrocardia, and was surprised to find that the fluid had disappeared, the pneumonia had cleared up, and the heart was in its normal position on the left side. I suppose that there was an atalectasis of the right lung, a blocking of the main bronchus, and a low position of the diaphragm, and that the spasmodic mechanical effort made involuntarily to increase the respiration had drawn the heart temporarily to the right side. I see no other explanation. Several plates were taken, and the radiographer was sure that he had not made any mistakes in marking the right side of the plates either before or after.

Another point on which I could not agree with the writer is in regard to the left auricle in mitral stenosis. The left auricle is thin and stands perpendicularly above the ventricle, and the filling of the ventricle in the normal heart seems to me to be a matter of gravity. The blood drops from the left auricle into the left ventricle. When the stenosis begins, and the blood does not drop quickly enough from the auricle into the ventricle, the muscular power of the auricle becomes more of a feature in filling the ventricle and then I believe that there ensues relatively a large amount of hypertrophy of the muscle of the left auricle. This hypertrophy enables a heart with mitral stenosis to be well compensated for a considerable length of time. The only thing which causes hypertrophy of the left auricle is a mitral stenosis, and we practically never get an enlargement of this region without a mitral stenosis, and never find mitral stenosis without enlargement of the left auricle. I think that the fact that the so-called mitral conformation of the heart is a *sine qua non* in the diagnosis of mitral stenosis is not sufficiently appreciated.

Dr. Adam J. Simpson (Chester): I do not think that mitral stenosis ever occurs without regurgitation. I do not think it can occur without regurgitation. The very nature of the pathology of stiffening of the valves makes for regurgitation; and when the statement is made that cases with insufficiency (which usually means regurgitation) offer the best prognosis, I should say that if they do it is because there is no pathology.

I think this is well backed up by Cabot, in his four thousand autopsies. He says that in those cases that have been diagnosed mitral regurgitation, with the classical physical signs of simple mitral regurgitation, there is no disease of the mitral valve, and these should be called normal hearts. The same infection that causes stenosis of the mitral valve (the stenosis which has to have some regurgitation) also causes the stenosis of the aortic valve. He has shown that syphilis never causes stenosis of the aortic valve, and never in any way attacks the mitral valve. This can readily be analyzed and checked up, if one is inclined to follow it out. In syphilitic aortitis the syphilis hits the base of the aortic valve and pulls it back against the side of the aorta. It does not travel to the ends of the valve, and could not cause stenosis.

In stenosis we have the same infection causing mitral stenosis that causes aortic stenosis. Then you have regurgitation. You cannot have stenosis without regurgitation, because the valve is stiffened and stays in the same position like a fish mouth. I cannot see that cases of mitral insufficiency *per se* show the best prognosis, unless they are functional valve conditions, which had better be called inorganic. These are the cases in which the murmur disappears. If a man makes a disagnosis simply on the presence of the murmur that he hears, possibly the cases do get well.

Dr. James D. Heard (Pittsburgh): Dr. D'zmura's return to the dissecting room, in the hope of being able to explain certain symptoms in cardiacs upon anatomical grounds, has resulted in a useful piece of work. The stimulus to Dr. D'zmura's research was his belief that while the heart muscle plays the major rôle in cardiac failure, nevertheless, certain symptoms of which decompensated patients complain are not fully explained on the basis of functional inefficiency of heart muscle alone. Dr. D'zmura has drawn no definite conclusions. However, his findings are highly suggestive, and I believe with him that further investigation along anatomical lines may be fruitful of practical results. Such investigation may, for example, help us to explain the curious and varied postures which certain cardiac patients voluntarily assume in order to obtain relief from dyspnea or from pain. If the underlying factors are understood, it is possible that in certain instances, at least, measures for relief may be devised. A very striking case has recently been observed by both of us in which sleep could only be obtained after patient had assumed a knee-chest posture. When patient would fall to either side, he would be awakened by urgent dyspnea and precordial pain. The clinical picture was rendered very striking by the fact that pressure decubitus developed on both knees. This patient had marked myocardial insufficiency, as evidenced by profound decompensation and the presence of pulsus alternans. The heart was very large. It was difficult or impossible to explain all of this patient's symptoms upon the basis of myocardial insufficiency.

Dr. Arthur C. Morgan (Philadelphia): Dr. D'zmura has well emphasized the fact that our studies are along the line of symptoms due to an altered chemistry of the blood. The question of dyspnea in mechanical affections of the heart is along this line, yet we must not dissociate the effects of the mechanical conditions present. The nocturnal asthma or dyspnea, or the Cheyne-Stokes type of dyspnea, and various types of abnormal breathing, can be explained along the line of altered blood chemistry. However, the mechanical effect of the accumulation of effusion in the pleural sac, pericardium or abdomen must be considered; and the line of treatment in cases due to these two causes is entirely different. I have been interested, during the last two years, in noticing the mechanical effect on the breathing in patients with effusion in the chest. My attention was particularly directed to two cases during the "flu" epidemic. The patients had accumulations of pus that at first were not diagnosed during the height of the disease. After the pneumonia element had decreased and the fluid remained, we found the following symptom complex present: The patient would have more or less pain during his waking moments. That might have been explained by the filling up of the lung, and by insufficient oxidation and aeration in the lung; but at the time that the patient would drop off into a sleep, normal or induced by sedatives, he would be suddenly taken with an anginose condition, would rise up and change his posture to a semi-recumbent or orthopneic position, and would complain of a heavy weight in the side affected.

We are all familiar with the night cry of children with hip-joint disease, which is explained by the tetanic contraction that occurs during the daytime, caused by nature's attempt to keep the part in place, and the relaxation that occurs during sleep. I think that we can draw an analogy between this condition and that of the chest muscles in attempting to take care of the extra work imposed on them by the accumulation of fluid. When we have this tendency to relax, the chest muscles that have been over-contracted in making movements have an extra pressure, which weighs down the diaphragm and affects the respiration, and the patients waken with this terror.

The treatment of the chemistry side is along the line of altering the chemical condition, either by removing that which is in excess or by supplying that which is deficient. Sodium bicarbonate has much to do with adjusting matters along that line.

Regarding the mechanical side, we have two treatments: first, rest of body and mind; and second, the administration of digitalis. Because such a patient coughs, this is no indication for giving a cough medicine. In these cases one ounce of digitalis is worth more than a barrel of the best cough syrup.

Dr. Martin T. O'Malley (Scranton): I wish to say just a word to emphasize what Dr. Simpson has said of the work of Dr. Cabot. I do not think that we can get far away from the idea of mechanics in his four thousand autopsies. This work has not all been published as yet, but enough of it has been told to give us something of an idea of the results of this extraordinary cardiac study at the Massachusetts General Hospital. Dr. Cabot treats of the lesion in rheumatic heart conditions as being obstructive. My teaching as a student was that the pathology was more vegetations on the valves. His work shows that the pathology attacks the valves generally, not in selective portions, and that the ultimate result is stenosis, the same as if a purse string were put through the valves. Cabot and his coworkers at the Massachusetts General have also found, in the large number of autopsies referred to, that rheumatic heart conditions probably show more involvement of the aortic valve than we would judge from clinical features; so that the obstructive lesion is an important feature of this condition, and we cannot well get away from the pure mechanics.

Someone said something about the autopsy room. I do not know whether it was meant as a stricture on that teaching; but I think that the tendency is going back in that direction, and that its value is such that it cannot be discarded or lightly regarded.

Dr. Samuel R. Haythorn (Pittsburgh): As a pathologist who has done a good many autopsies, I should like to call attention to one fact; and that is that the examination of the records of four thousand autopsies, while very important, is not to be compared in importance with a series of dissections in which one certain field is studied.

Dr. D'zmura (in closing): Apparently I gave some of the members a wrong impression. They thought that I was not aware of the heart muscle and the chemical factors. It is impossible in a paper of ten minutes' duration to embody all the factors in such a complex condition as heart failure; my main purpose was simply to emphasize the mechanical aspect.

I do believe that very often the rôle of the myocardium has been overrated. This idea was strengthened by an analysis of Mackenzie's reports on angina pectoris (Appendix, Diseases of the Heart). He claims this condition to be the expression of an exhausted heart muscle, and I found that his patients with angina pectoris without valvular heart disease lived much longer than those who had valvular heart disease. The answer is apparently simple. Nevertheless, if we are dealing with an exhausted heart muscle to begin with, one would think that death would occur just as soon without valvular lesions, if the mechanical element is not of great importance in determining the ultimate outcome.

In regard to the point that Dr. Litchfield brought up about the position of the heart, I would say that this has been discussed for a long time and still we do not know what constitutes the normal position. What may be normal for one patient may not be for another, and I feel that a detailed discussion of that aspect is beyond our present knowledge. One has only to examine the auricles to realize how weak they are. The hypertrophy of which they are capable is extremely limited from a functional standpoint.

I wish to assure Dr. Simpson that I have known for several years that the predominating influence in a mitral lesion is stenosis. I studied under Dr. Thomas Lewis in 1914 and got his views on that subject at that time. In the paper just read, the differentiation is made on a clinical basis, the predominating lesion being specified to make classification more simple. I realize fully that various combinations may be present and that all so-called functional types should be excluded.

Dr. Morgan's remarks about digitalis remind me of the fact that very often these patients show no clinical response to the administration of the drug, despite the definite progressive lowering of the T wave found in the electrocardiogram. We have done something to the heart muscle, but evidently the heart muscle alone is not able to take care of the entire situation.

I wish to thank all the members who participated in the discussion.

ON THE POSTEROLATERAL SCLEROSIS SEEN IN CASES OF SEVERE ANEMIA*

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We fully realize in offering this subject that it has been well and studiously presented in past years, not only to this Society but also to others. Among those who have written on it and have presented their cases here are Leopold and Cadwallader. The names of Burr, Lloyd, Dana, Putnam and Risien Russell are intimately associated with the condition. In the Archives of Neurology and Psychiatry for July, 1921, Hamilton and Nixon have reviewed the literature and have gone into the subject in a comprehensive manner. Our reason for presenting the subject to-day is because of the frequency with which cord changes are seen in anemia and because, despite the fact that many papers have appeared on the subject, the disease has occasionally been overlooked in the past. Even most textbooks on neurology give a poor description of the disease and omit the diagnostic points. The disease is common in comparison with amyotrophic lateral sclerosis and much more frequent than multiple sclerosis.

In practically all the papers that have been written on this subject the credit for pointing out the characteristic sensory loss by which the diagnosis can be made has been given to Déjerine, who wrote on the subject in 1913 and 1914. We have found that R. T. Williamson pointed out this sensory loss as early as 1911.

The early symptoms in these cases are usually very similar and many times identical. The most constant symptom at the onset is paraesthesia of the hands and feet. In fact, it is so common that we believe its presence should immediately call to mind the possibility of changes in the nervous system seen in anemia. Actual pain is uncommon, although the severe involuntary jerkings of the lower limbs may by their violence produce pain by overaction of the muscles. These involuntary jerkings are frequently observed and we have seen the bare statement of the patient that he had severe pain in his legs, without an inquiry as to the time or a possible causation, lead to the erroneous impression that the patient had the lightening pains of tabes. Disturbance of gait is the rule and because of the posterior column involvement, the chief disturbing element is that of ataxia. Weakness is also complained of early. Bladder and rectal disturbances are distinctly uncommon early in the disease although met with frequently later on. Unlike tabes there are no girdle symptoms and ocular signs are only rarely seen. We should like to point out at this time that the nervous system may be attacked before there is any evidence of blood disease, and as examples of this condition to report several cases. While this has been pointed out before, its possibility it still denied by some. It is likely that some of these cases have had blood changes which have cleared up, or what is more likely, the toxin or whatever it is that produces pernicious anemia may act upon the spinal cord before producing alterations in the blood. Not all of these cases have pernicious anemia but a great percentage of them have a severe type of secondary anemia. The anemia itself probably has little or nothing to do with the involvement of the nervous system. Late in the course of the disease the patient may present the signs and symptoms of a complete transverse myelitis, and we have seen one case of this kind in which the diagnosis of spinal cord tumor was made. The age of onset varies from 40 to 70, and we have been impressed with the frequency of the condition in people over 60.

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In the typical case of posterolateral sclerosis seen in anemia there are certain physical signs by which the diagnosis can be made with a certainty that is reassuring to those who pessimistically believe that diagnosis is becoming a lost art. Pyramidal tract symptoms, viz: weakness, spasticity, ankle clonus, increased reflexes and Babinski's sign, especially the latter are usual findings. Occasionally, and especially late in the disease, the spasticity and deep reflexes may disappear, but Babinski's sign is constant. It is, however, by the sensory symptoms due to posterior column involvement that this disease can be recognized. The forms of sensation that are conducted by the columns of Goll and Burdach are the sense of position, the sense of vibration, and tactile discrimination. All other forms of sensation are intact early in the disease, although late when more or less of a transverse myelitis is present there may be grave impairment of pain, touch, heat and cold and deep pressure. The exclusive loss of the sense of vibration and the sense of position with the pathognomonic sign of pyramidal tract involvement, viz: Babinski's sign, occurring in the lower extremities is diagnostic of the cord changes seen in severe anemia. Wilson has described cases of post-diphtheritic ataxia with the identical sensory loss seen in severe cases of anemia but the pyramidal tract symptoms were absent.

The pathology of the involvement of the nervous system in cases of severe anemia is more or less constant. The spinal cord is especially involved, and the parts which bear the brunt of the disease are the pyramidal tracts and Goll's column. The sclerosis in the posterior column begins close to the posterior septum. Unlike tabes and the posterolateral sclerosis due to syphilis, the meninges and the posterior roots are normal. As the disease progresses the cord becomes more and more involved until even a complete transverse myelitis may be produced. It is in this stage that a diagnosis is difficult, and may be confused with spinal tumor or syphilitic disease. We have had occasion to examine the peripheral nerves in only two cases, and in both of these they were normal. Hamilton and Nixon, in their recent paper on the subject, examined the peripheral nerves in seven cases and found them affected in six. If other forms of sensation besides the sense of position and the sense of vibration are affected early in the disease, it may be due to peripheral nerve involvement.

As illustrations of the fact that cord changes may occur before there are demonstrable changes in the blood we should like to report the following cases one and two. Cases three to twelve are examples of the disease with autopsy.

Case 1. Mr. A. B., 54 years of age, married, was first seen in May, 1916. He had complained for some months of numbness in the feet and hands and of difficulty in walking. He had had no pain or sphincter disturbance. On physical examinations he was found to be a well-nourished man with normal cranial nerves, lungs and heart. His station and gait were moderately ataxic. His patellar and achilles reflexes were absent. Plantar stimulation produced a typical Babinski reflex on both sides. Pain, touch, heat and cold sensation were normal. The sense of position was greatly disturbed in the toes of both feet and the sense of vibration was affected below the knees. The blood Wassermann was negative. The blood count made showed 4,700,000 red cells, 7,000 white cells and 85 per cent hemoglobin. A stained specimen of the blood showed nothing abnormal. This man continued in fairly good health and kept at his work for three years, when he again came under observation. At this time his blood gave the classical picture of pernicious anemia. After a period of about four months the blood markedly improved and the man returned home. During the time the blood was in bad condition the man was extremely weak and could not walk. After the improvement began he returned to his work for a period of six months, when the blood again rapidly deteriorated and the patient died.

Case 2. T. M., female, age 43. The first symptoms in this case were swelling of the ankles, general weakness and painful twitching of the lower extremities. She also had paresthesia of the hands and feet. The first physical examination of this patient showed a spastic paraplegia with normal pain, heat, cold and touch sensations throughout. The red cells were 4,800,000 and the white cells 6,500. The hemoglobin was not estimated and a smear of the blood was not made. Despite a negative Wassermann of the blood and a negative spinal fluid, but because of deafness and sterility, the diagnosis of syphilitic paraplegia was made. Three years later the real cause of her trouble came to the "light of day." She had the typical color of pernicious anemia and showed the characteristic blood picture of that disease. The gastric analysis showed an absence of hydrochloric acid. The lower extremities were extremely spastic, with bilateral clonus and Babinski sign and markedly exaggerated reflex. Even at this stage, pain, touch, heat, cold and deep pressure were normal. The sense of position and the sense of vibration were lost in the lower extremities.

The above two cases show clearly that the spinal cord symptoms may appear before any blood changes are present, or they may appear during a remission of anemia. In either event the anemia itself plays an unimportant rôle in the production of the cord changes, which are toxic in origin.

Case 3. J. W. C., male, white, age 61, first complained of weakness in his legs. This was on November 18, 1916, the date of his admission to the hospital. A physical examination made some months later showed a pale, emaciated old man with partial incontinence of bladder and bowel. He was confined to bed. He had but little power in his lower extremities but could move them slightly. The grip in the hands was good and equal on the two sides. The patellar and achilles were exaggerated and there was a bilateral Babinski reflex. Tactile pain and temperature senses were diminished below the waist line. The sense of vibration and of position were completely lost in the lower extremities. In the upper extremities pain, tactile and temperature sense were normal, but the sense of position was considerably disturbed, the last being more marked in the large joints. A blood examination showed 2,300,000 reds with 9,200 whites and sixty per cent hemoglobin.

Before death he developed symptoms of a complete transverse lesion with loss of all forms of sensation to the waist line. It was at this time that the diagnosis of spinal cord tumor was considered by some.

Case 4. M. L., a white woman, age 69, first complained of paresthesia in the hands and feet in the fall of 1916. One year later she was admitted to the hospital and she said that she had not been able to walk for some eight or nine months. She complained of pain in the back and down the right leg and around the abdomen. The paresthesia in the hands and feet persisted. The pupils were irregular, but reacted to light and in accommodation. The cranial nerves were normal. The lower limbs were spastic, the patellar and achilles reflexes were exaggerated and there was a bilateral Babinski with ankle clonus. The sense of position and vibration were absent below the knees. Pain, tactile and temperature sense were normal. The reflexes of defense were well marked. At no time was there a blood examination made on this patient.

Case 5. A. N., white, age 64. Her chief complaint was paresthesia in the hands and feet. The legs felt cold and had been weak for some time. At no time did she have any pain or disturbance of the sphincters. Physical examination showed a sallow woman with an ataxic-paretic gait. The deep reflexes were exaggerated, and there was a typical Babinski on both sides without an ankle clonus. The cranial nerves were normal. The sense of position was lost in the toes, and the vibratory sense was diminished below the knees. The urinalysis and blood Wassermann were negative. The blood examination showed 1,856,000 red cells, 4,640 white cells and hemoglobin of 49 per cent. There was slight anisocytosis but no other morphological changes in the red cells. This patient died three years after the onset of symptoms.

Case 6. G. F., male, white, age 60, first complained of paresthesia in the hands, followed shortly by the same sensations in the feet. When first examined he was unable to stand or walk. His conversation was garrulous but he was able to give a fair account of himself. The power in the upper extremities was much diminished and equally so on the two sides. There was no ataxia in the finger to nose test and all forms of sensation were normal in the upper extremities. The lower extremities would often jerk up involuntarily as the patient was lying quietly in bed. The movements of the legs were extremely ataxic. The patellar and achilles reflexes were greatly increased. An ankle clonus and a typical Babinski was present on both sides. Subsequently this man developed disturbances of other forms of sensation in the lower extremities because of the extention of the process to tracts other than the pyramidal and posterior. Late in the course of the disease he became totally paraplegic with marked and painful involuntary jerkings of the legs. He also toward the end showed a simple dementia. He died four and one-half years after the onset of his illness.

Case 7. G. T., white, age 54, was taken sick three months before admission to the Philadelphia General Hospital with fever, sweats and general muscular pains. He lost twenty pounds in the three months before his admission to the hospital. Physical examination showed an ataxic-paretic gait and a positive Romberg sign. The cranial nerves were normal. There was slight ataxia in the upper extremities. The deep reflexes were exaggerated in the lower extremities with a Babinski reflex on each side. The sense of position and the sense of vibration were seriously impaired below the knees. Pain, touch, heat and cold and the sense of deep pressure were absolutely normal. There was slight impairment of the sense of position in the fingers. The reflexes of defense were present. The blood showed the characteristics of pernicious anemia. The feces were negative for parasites. This patient died five months after the onset of symptoms.

Case 8. W. C., male, white, age 58, was admitted to the Philadelphia General Hospital for carcinoma of the stomach. While there was no neurological examination made, the microscopic examination of the cord showed typical degeneration of the type seen in anemia. The blood count in this case showed a pronounced secondary anemia. This case is of particular interest, since at autopsy the mass in the stomach proved to be a fibroma.

Case 9. J. H., male, age 66. His trouble began one year before his admission to the hospital with numbness in the hands and feet. He had lost much weight and strength, and had been short of breath for some weeks. There was no disturbance of the sphincters. Physical examination showed that the cranial nerves were normal, and all the deep reflexes were exaggerated, with bilateral Babinski and ankle clonus. The sense of position was impaired in all four extremities, and the sense of vibration was lost below the neck. All other forms of sensation were normal. The blood and spinal fluid Wassermann were negative. The hemoglobin was 55 per cent, red cells 1,750,000, and the white cells 5,400. He died two years after the onset of symptoms.

Case 10. M. D., white, female, age 48. One and one-half years before admission to the hospital this patient noticed numbness in the hands and legs. Paresthesia was more or less persistent but more marked in the legs. About one year later she began to lose power in the legs and experienced considerable pain. The physical examination showed that the skin was of a yellowish color and she was unable to stand. The grip in the hands was weak and the sensory tests were uncertain. The lower limbs were contracted to the most extreme degree possible and all voluntary power in them was lost. Pain sense and the sense of position was entirely lost in the lower limbs. The patellar and achilles reflexes were lost on each side. At no time was there a blood examination made. This patient died two years after the onset of the illness.

Case 11 C. M., white, female, age 62. This patient first came under observation nine days before she died. At that time she was completely bed-ridden. The disease had begun two years before with paresthesia in the hands and feet. This persisted, and she grew weaker as time went on. The lower limbs were extremely weak and she could only move them slightly. The grip in the hands was decidedly diminished. The achilles and the patellar reflexes were markedly exaggerated and Babinski's sign was present on both sides. The sense of position and vibration was lost in the lower extremities. The other forms of sensation were considerably disturbed due to the advanced stage of the disease. A blood count showed 2,500,000 red cells and 8,000 white cells with poikilocytosis and anisocytosis.

Case 12. E. M., female, white, age 58. Her illness began with dyspepsia and with paresthesia in the hands and feet. As time went on, the feet became swollen and she became very weak and her skin became yellowish. The lower limbs were spastic, the patellar and achilles reflexes were markedly exaggerated and Babinski's sign and ankle clonus were present on both sides. The sense of position and vibration were absent below the knees. These forms of sensation were also greatly diminished in the upper limbs. Other forms of sensation were not disturbed. A blood examination showed 830,000 red cells, 4,800 white cells and 35 per cent hemoglobin. Anisocytosis, poikilocytosis and normablasts were present. This patient died six years after the onset of her illness.

Cases 3-12 were all followed to autopsy. The pathology in the spinal cord was similar, varying only in degree. A lace curtain degeneration was present in the posterior column and in the pyramidal tracts. In some of the more severe cases the degeneration in the anterolateral tract of the cord was marked, this accounting for the loss in these patients of pain, heat and cold.

The roots and meninges were normal. In the two cases from which peripheral nerves were obtained they were found to be normal. One of the cases was far advanced. Careful blood, gastric and neurological examinations were often absent when the records were investigated. The frequency with which even a neurological report failed to mention the sense of position and of vibration showed a lack of respect for the functions of the posterior column that was distressing.

CONCLUSIONS

1. Spinal cord changes in anemia are seen frequently, and often rather late in life. Most of our cases were past fifty years of age.

2. The onset of the disease is gradual and the symptoms are much the same in every case. Paresthesia in the hands and feet has been an early and constant complaint and with this goes a gradual, increasing weakness, more marked in the lower extremities.

3. The characteristic motor and sensory losses are as follows: The lower limbs show the signs of pyramidal tract involvement with the loss of the sense of position and of vibration. The other forms of sensation remain intact until late in the disease.

4. The spinal cord symptoms are frequently present when the blood picture is almost normal. This is due to the toxin which, in many cases, causes spinal cord degeneration before the blood is affected.

5. One of the principal reasons that some of these cases have been overlooked in the past has been due to the failure to test for those forms of sensation which are lost early in this disease, viz: the sense of vibration and the sense of position.

6. The prognosis in these cases is always grave and many of them show a simple dementia late in the disease. Some of our cases have lived as long as five or six years after the onset of the disease.

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DISCUSSION

Dr. George J. Wright (Pittsburgh): From a neurological point of view, I think that this type of combined degeneration is one of the most interesting things that we have to study. In fact, any condition in which there is such a wealth of sensory and motor phenomena is always interesting. I think it is just as interesting as old-fashioned tabes, if not more so. I am sorry the lantern demonstrations were not given, because there are two things of importance that can be shown by the lantern slides.

In the first place it is the usual beginning of the trouble in the posterior columns in the neighborhood of the median fissure that causes the early sensory symptoms: numbness and tingling, disturbance of position and vibratory sense. The other types of sensation, such as touch and temperature, are not involved until there is a further progression of degeneration laterally, when it catches other fibers, causing disturbance of pain and temperature sense.

The other thing of importance that could be shown by the lantern slides is that the condition is not an inflammatory one, but a degenerative one, in which there is a parenchymatous degeneration of the essential nerve fibers. It is not an inflammatory condition, as in syphilitic myelitis, disseminated sclerosis, and so on, but a primary parenchymatous degeneration and this fact is of enormous value in the consideration of prognosis.

Of importance also is the fact that this degeneration begins primarily in the cervicodorsal and lumbosacral regions. We must, therefore, look for the sensory phenomena in the extremities; not only below the knee or the elbow, but in the early stages, below the ankle and wrist.

Now there is another thing that I think is worthy of mention. I am recalling this because of a little argument which occurred in a case in which the diagnosis might, in some respects, have been considered in doubt. It was a hospital case and I thought there was a combined degeneration of pernicious anemia type. The patient had an anemia, I think an achylia, and some disturbance of sensation, particularly posture and position, as well as weakness in the legs. The patient was put under treatment for the organic nervous disturbance by means of baths, massage and electricity, and there was improvement. In the mind of the medical man, that argued in favor of a diagnosis of neuritis, as against a posterior column degeneration. At the time, I felt that the answer was that most organic cases when put on treatment, usually improve to some extent, but after reading an article by Hamilton recently, in which he made an exhaustive study of nerve root involvement in pernicious anemia, I thought that the explanation was there. In some cases there may be involvement of the nerve roots producing certain symptoms and because the peripheral neurone is involved, there is a chance for regeneration, whereas when the cord alone is involved, there is not the same chance. In the case mentioned, which has in recent weeks got much worse, the explanation of the apparent improvement may be due to the fact that there was, in addition to cord disease, a coincident disturbance of the peripheral nerves.

Dr. McIver brought out a fact that must be remembered, and that is that the blood picture does not run parsi passu with the spinal cord changes. I have seen profound cases of anemia with very little spinal cord changes, and on the other hand, I have seen profound changes of the cord in cases in which the anemia was relatively moderate. Only last week I had a case in which, however, the cause of death was shown at autopsy to be due to a pyelitis. Before death, transfusion had been considered, but the medical consultant said that the blood picture was as good as he would desire to see as the result of therapy. That is, considering that he had a bad case of anemia and had given therapy, he thought that the blood picture was good enough, and that there would be no advantage to be derived from transfusion. In a few days the patient died of acute pyelitis, as I said.

These cases are very important. I think that with a little care in evaluating sensory disturbances we should be able to make early diagnoses. I think also that after the age of thirty-five or forty years, or at any age, one should be very careful in interpreting the phenomena of numbness. It will not do to pass it off as a vascular phenomenon or one due to the vegetative nervous system; because one may overlook thinks like syphilis, early disseminated sclerosis, combined degeneration, and other things which occur in the cord.

Dr. Max H. Weinberg (Pittsburgh): I think that to just call it paresthesia of the toes or fingers is not sufficient. The patients, in pernicious anemia, say that they do not feel the floor. They have no sensation of treading on the floor, as we usually get it. This goes a step farther than numbness. It is due to regular sensory changes in the posterior column. Robert Bing emphasized the point that when we are dealing with posterior column changes, the first thing lost is vibratory sense. That goes before deep joint sensibility.

As regards the doctor's statement that anemia had nothing to do with the changes, it is possible that we are dealing with a locus minoris resistentia in the cord. We know that there is an absolute selectivity of the degeneration. It is a little farther laterally than tabes, and also involves a part of the column anterior to the posterior horns. That is why we get both posterior-column and pyramidal-tract changes. Pernicious anemia changes are not limited to the cord exclusively, but often involve the brain as well.

Regarding treatment we know the hopelessness of pernicious anemia; but several cases have been reported to have done well with heliotherapy in connection with arsenical treatment. We do not know what the improvement is due to, but it has done good in certain cases.

Dr. Irwin J. Moyer (Pittsburgh): I just wish to note the main points of a case that I have under observation at present. As regards the nervous conditions, I shall not go into detail. They are those that have been cited by Drs. McIver and Wilson. Regarding the etiology, it looked as though there was a disturbance or destruction due to nutritive processes, and not an inflammatory process; and the thought occurred to me: Is there not an element that might be in the disease called sleeping sickness—trypanosoma? It has remissions, as we see in pernicious anemia. It runs a course of three years, usually. The patient atrophies until before he dies there is not much left but the bones. There is a process affecting nutrition, due to some type of infection. In this case that I wish to cite, there were digestive disturbances. The hydrochloric acid was low, and the patient could take but a small amount of nourishment, no matter what it was. If these bounds were overstepped (six hundred calories), the digestive processes were unable to take care of the food. It was not digested, and only gave the patient distress.

Another thing about this patient is the intense abdominal pains, which are not colic pains, but what you might call enteralgias—deep-seated, gnawing, continual disturbances of sensation, without any rigidity of the abdomen or anything of that sort, and not inflammatory at all. They are of a distressing character, and nothing has any effect on them except codeine or morphine. I did get some relieving effect from large doses of belladonna.

The attacks seem usually to be preceded by a little excess in the eating of articles of food. The patient has become afraid to take nourishment because of the probability of distress, which does not seem to be of a fermentative character, but to be a deep-seated enteralgia. She cannot rest without the use of anodynes.

Dr. Tom A. Williams (Washington, D. C.): The interesting feature of this disease is exactly what has been drawn attention to by the speaker, namely: that there are cases of quite marked cord changes without any blood changes at all. The most conspicuous example was a case that I saw ten years ago in an army officer in whom, for a year, there were no blood changes at all. He was carefully examined every month. His symptoms had begun with mental disturbances of a melancholic type, and the predominant lesion was a pyramidal one, so intense that he could not walk. It was only after a year that he developed sensory changes and the typical picture of pernicious anemia, of which he died eighteen months later.

That leads me to say that there are a number of cases in which the picture is not so clean-cut as that related by Drs. McIver and Wilson, in that sometimes there are violent pains. These pains do not give the character of a root pain, but are constant, severe pains; and I think that we must attribute them, not to irritation of the root, but to actual disturbance of the sensory tract in the cord. That, of course, is a moot point. We cannot lay down a hard and fast rule, and say that the picture drawn by Dr. McIver, which is the commonest one we have in suspected pernicious anemia, is the only one. It is difficult, sometimes, to persuade the general practitioner or internist who has brought the case you are dealing with that it is pernicious anemia because, he says, the blood is normal. On two occasions that I recollect there has been extreme skepticism, easily noted by an observing neurologist, and only a few weeks later was the conviction obtained.

I think that we can account for the irregularity of the symptoms on the basis of a process which is a diffuse one. My experience is not quite that of one of the speakers, that the disease begins so frequently in the lower limbs; because in all the cases that I can recollect, there has been paresthesia of the fingers, although the incapacity of the hands was not so great as that in the lower extremities. But the beginning of subjective signs has been contemporaneous. That is explained by the diffusion of the process, which is not a systemic disease. The description might lead some not versed in pathology to believe it to be that, but it is not. The lesions may extend even to the brain, and I am not sure that there are not more cases in which the cerebrum is involved than we suppose, and that these escape detection because they pass to death and the blood picture is not even suspected.

In many cases that I have seen there has been the characteristic yellowish discoloration of the skin. Even in the army officer, the skin of the body showed this characteristic yellowish color. It is a great help to us, when we suspect pernicious anemia, to look at the skin from that point of view. I wish we had the means, in virtue of the power we have of early diagnosis, to conquer the disease; but as we do not know the etiology and the empirical treatments have failed, I do not think that we should be in any better position if every case came early to examination. However, I think cases should be diagnosed much earlier, if a thorough neurological overhauling were given every patient who complains of numbness. Dr. Hodges of Richmond, Va., has reported cases which he himself treated for neurasthenia years before he subsequently treated the same patients for pernicious anemia. They had paresthesias, but he was not then acquainted with the means of diagnosis. So we cannot say whether they had thus the loss of vibration and attitude senses, which are possibly the most conspicuous early signs of the disease.

SELECTIONS

THE REMOVAL OF FOREIGN BODIES FROM THE CORNEA

GEORGE H. SHUMAN, M.D.

PITTSBURGH

Two things have come to the notice of the writer recently which make him want to discuss the technique of a very common and a very simple procedure, viz: the removal of foreign bodies from the cornea. The matter is generally looked upon as being so trivial, especially by the laity and often even to the victim, that the discussion of it to a professional audience may seem not unlike the presentation of a case of chicken-pox or of a common "cold" to a senior class of medical students. The trite or commonplace is never so interesting as the spectacular, either to teacher or pupil, but there are many conditions among the former group which must be considered important from the standpoint of the relative quantity or frequency of them. Rosenau is authority for the statement that "Could the sum total of suffering, inconvenience, sequelæ, and economic loss resulting from common colds be obtained, it would at once promote these infections from the trivial into the rank of the serious diseases."[1] The writer feels much the same in regard to foreign bodies lodged in the superficial structures of the eye. In practicing ophthalmology in a large community devoted almost exclusively to industrial pursuits, especially the manufacture of iron and steel and their products, the importance of the matter is daily brought to one's notice.

In the author's experience, the most common cause of ulcer of the cornea among workmen is foreign bodies on or in the cornea which have not been promptly or properly removed and the case properly handled. The surgeon is frequently told by the patient that he knew he had something in his eye, but that he thought that it would "work itself out," or that some fellow workman or some poorly trained, inexperienced or unqualified person had taken something out of his eye or had made an unsuccessful attempt to do so. If the foreign body happens to be in the central portion or pupillary area of the cornea and infection and ulceration occur, serious impairment of vision, at least for a long time and sometimes for all time, is apt to follow. An ulcer elsewhere in the cornea is disfiguring but not so damaging, unless the infection causing it is so virulent as to spread to the pupillary area in spite of all treatment, and, under such conditions, especially in elderly subjects or those in poor general health, ulcer of the cornea may endanger the integrity of the entire eyeball.

A matter so commonplace or elementary as the removal of corneal foreign bodies receives scant notice in textbooks on ophthalmology or ophthalmic surgery. The author would probably not have ventured upon this statement of his own experience were it not to call attention to a point in technique which has recently come to his notice in two instances. The first instance was the appearance, in a prominent medical journal, of the following advice on the removal of corneal foreign bodies, as part of an article under the title "A Word to the General Practitioner About the Handling of Eye Cases," written by an ophthalmologist who holds a teaching position in a recognized medical college in one of our acknowledged medical centers: "It is better not to attempt to remove all the rust stain from the bed on which the foreign body has rested. Nature will take care of this."

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[1] Milton J. Rosenau: "Preventive Medicine and Hygiene," New York and London: D. Appleton and Co., 1914, page 173.

The writer should like to register a dissenting voice on this advice or method of treatment. In his experience, better and more prompt results are obtained by curetting off the rust stain or "charred" cornea, no matter how slight, on the first visit of the patient and at the same time that the foreign body is removed. With this radical treatment, the wound, if the eye is bandaged and kept at rest, will be filled in and covered over with a healthy growth of epithelium in from 24 to 48 hours, the length of time depending somewhat upon the size and depth of the currettement necessary, and with a minimum of inflammatory reaction. Whereas, if the ring of rust stain is allowed to remain, developments are less certain. It is true that in some cases, where the amount and depth of rust stain or char is slight, spontaneous healing will take place without apparent sloughing, but recovery is slower and a perceptible stain is left. But in others, the zone of damaged cornea surrounding the foreign body will have to slough off before healing can take place. This process, nature's way of ridding itself of an offending substance, requires time and usually entails considerable inflammatory reaction on the part of the eyeball and much suffering to the patient. The eye picture in this type of case is characteristic. Superficial examination shows the eye to be in a state of inflammation, with lacrimation and photophobia, contracted pupil, and a distinct circumcorneal injection, denoting a congestion of the iris or a beginning iritis. Examination of the cornea with focal illumination and with the aid of a corneal loupe will show a typical ring of brown cornea, with a clear spot in the center, which was the site of the foreign body which has been removed. If the case has been of several days' standing, the central spot will be a soft mass of necrotic cornea, which can readily be scooped out, leaving a saucer-like excavation. At this stage, the ring of rust stain can usually be readily lifted from its base en masse. The zone of cornea surrounding the ring will sometimes be markedly infiltrated; or the epithelial layer may be swollen and edematous, and can easily be stripped off or peeled back a considerable distance, somewhat like removing a layer from an onion. When the inflammatory process has been allowed to advance this far, it may require a week or more to bring about complete healing, and more or less scarring of the cornea will be left to impair vision or disfigure the eye, depending upon the depth of the lesion and whether or not the lesion is in the center of the cornea. It is the writer's contention that these annoying complications in an injury apparently so trivial can be reduced to a minimum by radical treatment at the first visit of the patient.

A case in point was one which came to the author recently and was the second event which lead to this discussion. The patient, Mr. M., age 28, salesman, of robust health, gave a history of having had a foreign body removed by an ophthalmogist several days previously. He said that the physician was now out of town and that the eye was giving him trouble and seemed to be getting a little worse. Examination with the naked eye showed a small ring of rust stain plainly visible on the cornea, at the superior temporal side of the center. The eye was photophobic, somewhat suffused with tears, and showed a slight circumcorneal injection, denoting a congestion of the iris. Examination with the corneal magnifier showed within the ring of rust stain a saucer-like crater filled with necrotic cornea, and a surrounding zone of infiltrated cornea, i. e., beginning ulceration. After careful removal of the infected debris and currettement of the ring of rust stain, the patient made a prompt and uneventful recovery, but with a degree of corneal scarring which was perceptible to the patient as a blur and which, in the author's opinion, might have been avoided or at least minimized had the rust stain been curretted off at the same time the foreign body was removed.

This case illustrates so well, too, what the writer has found in a somewhat extended practice with mill workers, namely, that in what they regard as so trivial an injury as a piece of dirt in the eye, they cannot be depended upon to take the proper care of the eye themselves or to return to the surgeon for observation promptly enough in case the eye does not do well after the foreign body, superficial though it may have been, has been removed. They almost invariably wait until infection and ulceration have advanced to the point of altogether preventing them from any longer pursuing their work or an attendant iritis prevents them from sleeping at night before they return for treatment. This is another reason why the author advocates radical treatment at the first visit and closure of the eye with a patch in all but the most superficial of corneal foreign bodies.

It must always be borne in mind that the conjunctival sac, within whose enveloping confines the cornea must always be, whether intact or robbed of its protective layer of epithelium by injury, is surgically very unclean, and that in mill workers, many of whom suffer from a low grade chronic conjunctivitis due to irritation from dust and smoke, any wound of the cornea is literally bathed in a secretion which may be swarming with infective microörganisms.

It may not be amiss, in this connection, to state the procedure in corneal foreign body cases which has given the writer the utmost satisfaction in industrial practice.

After complete removal of the foreign body and, if necessary, careful and thorough currettement of the cornea, being scrupulously careful to remove only the hopelessly damaged tissue, several drops of a 20 per cent solution of argyrol are instilled into the conjunctival sac. This solution is bland and nonirritating, and, in addition to any slight germicidal power which it may contribute, serves as a very valuable mechanical cleanser, for, on account of its viscidity and high specific gravity, it dislodges and floats out any secretions and debris which may be lodged in the folds or crypts of the conjunctiva. After the lapse of several minutes, the eye is irrigated with a warm boric acid solution. Then an ointment of 1-3000 bichloride of mercury in lanolin and petrolatum (made over Stieren's modification of White's formula) or an ointment of 1 per cent holocain and 4 per cent adrenalin chloride in lanolin and petrolatum, is placed in the lower conjunctival sac and with gentle massage upon the upper lid is spread over the cornea. A snug eye patch is applied just tight enough to prevent winking.

Patients frequently object to having the eye closed for what they regard as so trivial an injury, especially since the previously painful eye now feels fairly comfortable while still under the influence of the cocain anesthesia. But these are told that there is apt to be a return of the pain when the effect of the medicine passes off in half an hour or so and that, although the foreign body has been removed, there still remains an open wound which, until it heals, may give the patient the same sensation as though the foreign body were still in his eye, and that this open wound must be protected against infection and mechanical irritation from winking and movement of the eyeball. It is often necessary to explain further that putting the part at rest is necessary for prompt healing; that the average person winks about twenty times a minute and that upon an injured cornea every involuntary wink has much the same effect as a rub or a slap voluntarily made upon a cut or abrasion on any other part of the body would have. When the matter is put in this light, most workmen willingly submit to having the eye closed with a patch for a day or so.

It is needless to add that the operation of removing the foreign matter is best performed with the aid of a magnifying glass such as the Berger binocular corneal loupe (Meyrowitz) or the more pretentious binocular instrument of Bausch and Lomb, or the small Coddington or Spencer magnifiers of about 9 diameters for use with one eye. The cornea should invariably be inspected carefully afterward with a good magnifying glass in good illumination to make sure that every vestige of the foreign matter or rust stain has been removed. In difficult cases, in which the object may be so small or so placed with respect to the underlying coloring of the iris as to be especially difficult to keep in view, and the patient's eye is already become very sensitive and photophobic on account of the delay in coming to the surgeon, the writer has found the best source of illumination to be the tiny filament lamp of his May battery-in-the-handle ophthalmoscope, stripped of the condensing lens which envelops it in the instrument for regular use. This gives a small point of excellent illumination just at the spot where it is wanted and with a minimum quantity of light to irritate the sensitive and inflamed eye. The nurse holds the light and is trained to follow the point of the operator's instrument or instructed to hold the light in such position as best serves the conditions of the individual case.

A common fault of the inexperienced in removing a foreign body that is deeply imbedded in the cornea, is that they frequently scrape the delicate structure far and wide of the mark, whereas a single stroke deeply enough just to go under the foreign body at its very edge would be sufficient to dislodge it and produces little or no damage to the surrounding epithelium.

Park Building.

REPORT OF A CASE OF CRANIAL DEFECT

J. STEWART RODMAN, M.D.

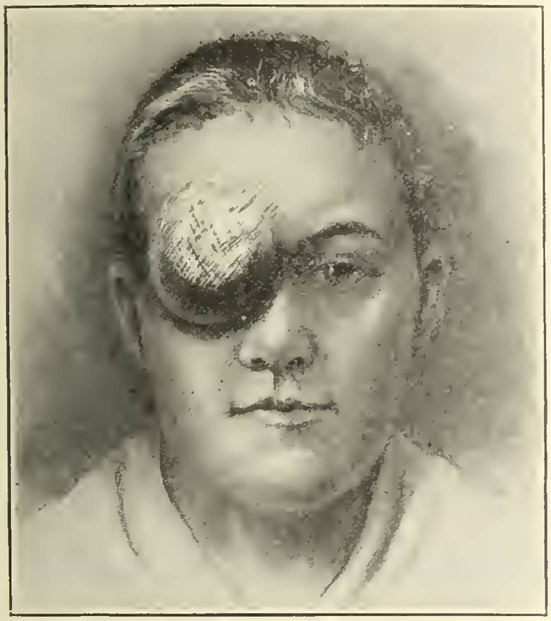
PHILADELPHIA

Name, A. G. Age, 20. White. Hwk.

H. P. I. On April 6, 1917, kicked in forehead by a horse. Sustained a compound comminuted fracture of frontal bone and right eye was destroyed. Comminuted fragments removed at once at hospital. Right eye enucleated April 9. Remained in the hospital 4 weeks and in bed at home 4 weeks. A bulging about size of a fist developed on side of injury immediately after fracture. This mass pulsates. Patient states that it is smaller when she is lying down.

Admitted to Dr. J. B. Roberts' service, Polyclinic Hospital, Feb. 3, 1919, with pulsating meningocoele in right supra-orbital region about size of lemon—right eye missing. Sac of meningocoele tapped on three occasions and a clear fluid removed.

Operation March 20, 1919, at 8:30 a. m. 25 cc. clear fluid removed from sac. Transverse incision. Opening found in skull—long diameter horizontal about 1" below surface, about 3" in length and 1" wide. Piece of fat and occipito-frontalis fascia made into free graft and stitched into opening with fascial side to brain. Fine silk used as suture material. Graft removed from supra-orbital region. Remains of sac stitched over graft; redundant scar and skin removed. Only normal skin saved.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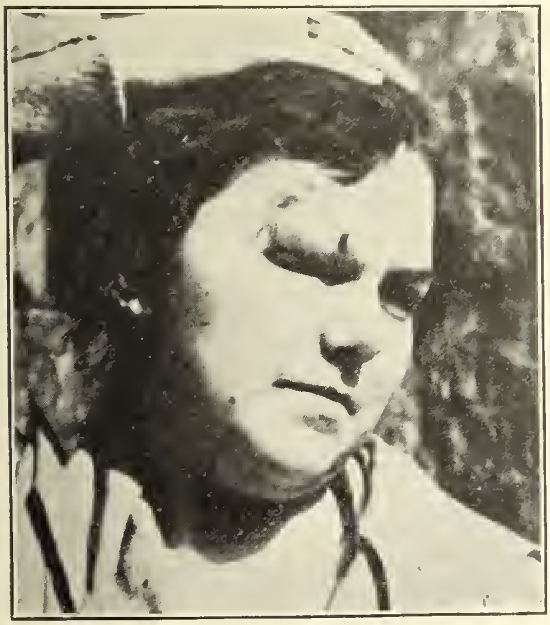

Final Result.

Patient seemed markedly improved following operation and remained so for about 6 months. Pulsation returned in meningocoele however, and general condition gradually grew worse. Status epilepticus suddenly developed March 19, 1921. Epileptiform convulsions began about 3 a. m. of that morning and ended at noon of same day. No convulsions since then.

Operation. Presbyterian Hospital, April 4, 1921. Cranial defect. (Ether.) Traumatic supra-orbital and frontal-right side. About size of hen's egg. Closure — first stage plastic — skin. Removing an eliptical portion of skin about 3 inches long 1½ inches in width. Skin edges mobilized and brought together over defect. (Black silk.)

Operation June 2, 1921. Presbyterian Hospital. Ether. Supra-orbital defect exposed. Pericranium turned over in form of flap, its base remaining attached to bony margins of the defect. When sutured in place with outside surface next to brain this membrane formed the first covering which afforded a good protection. As this was an oblong defect a portion of ninth rib and costal cartilege about 3 inches long was chosen and transplanted, each end fixed in place by a chromic catgut suture through the periosteum to the edge of the defect. No particular difficulty was encountered in the operative procedure. The skin flap was replaced and sutured with black silk.

For the first 48 hours the patient made a rather stormy recovery. After this convalescence was uneventful. Stitches removed on the tenth day.

The case is reported because, (1) the result is gratifying from the point of view of plastic surgery. There is now a firm closure with only a slight pulsation at one end of the scar. (2) She has remained symptomatically well since, having had no return of the epileptiform seizures and no headache.

PROFITABLE READING FOR THE DOCTOR

JOSEPH McFARLAND, M.D.

PHILADELPHIA

About a quarter of a century has now passed since the medical profession began to wake up to the fact that its members were no longer to hold the positions of importance in their communities to which their dignity was supposed to entitle them, because of defective general education that separated them from the other learned professions—the law and theology.

For nearly twenty-five years there has been continuous agitation for higher education in medicine, and college preparation as an entrance requirement to the medical school, with the result that the student of to-day enters upon his studies with at least two years of college work to his credit.

We well remember the words of one of the exponents of preliminary college education for medical men—"Is it not a shame that men should be admitted to a so-called learned profession without knowing anything about history, or biography, or art, or literature, or anything worth knowing about?"—and we fully agree with him.

But the college preparation was scarcely required before it was recommended that the years in college be devoted to subjects bearing directly upon the subsequent medical studies, and comprised mathematics, physics, biology, chemistry, and a modern language. It therefore of necessity became a scientific course, almost entirely left out of account the very humanities that the college president whom we have quoted, so strongly and rightly, recommended. It is therefore still quite possible for a student to have spent two or even more years in college, and yet come into the medical school with very little general education and no knowledge of literature.

We recently heard it said, and resented it at the time, though we were obliged to admit the truth of it afterward, that the medical man of the present day is a technically well educated man, but not a generally educated man at all. This attitude naturally brings up the now perennial question, "What is an educated man?" which no one seems able to answer satisfactorily.

It has not escaped the observation of medical men themselves, and certainly has not escaped outsiders, that when doctors get together, they always "talk shop." They even do this when they form the minority of the company, and it has been explained as the inevitable result of *the all-consuming interest of the subjects upon which their thoughts dwell.* It may, however, be the natural result of not having anything else to talk about. Doctors are great readers of medical books. Is that because they have no time for others, or because they do not know what others to read?

The writer has known casually or intimately more than three thousand medical students. With many of them he has talked about books, and the general impression obtained is that medical students neither know books nor read them, except as they form part of the daily work. He has frequently heard the confession that books would be read if only it were known what books would be profitable, and where they could be obtained.

That which is true before graduation seems to be almost as true afterward. Medical books are known and read, others are not known and are not read, and so the deficiencies of education are never compensated for.

It has been suggested that The Journal might with advantage to its readers publish a list of books profitable and interesting to everybody, and especially to medical men. Of course lists of books are numerous, and have been compiled from many points of view. There is Sir John Lubbock's "Hundred Best Books," Dr. Eliot's "Five Foot Book-Shelf," and Roosevelt's "Pig Skin Library." All of these can be well recommended, and might make our list a matter of supererogation, were it not for the fact that they seem to have fallen upon sterile soil so far as doctors are concerned. Books enjoyed and found profitable by a medical man may make a stronger appeal to other medical men. It is for this reason that we act upon the suggestion and offer the following list.

We recommend the following titles, arranged in groups, following one another alphabetically. No group is supposed to cover the subject—there are many more than a hundred books in every field mentioned. Some subjects seem to have been neglected; it is not because they do not merit a greater number of titles, but because others were found to be more interesting.

Another in compiling a list would undoubtedly proportion the titles differently according to his individual taste. Let it, therefore, be understood that the subjoined list is not supposed to comprise the very best of the world's books. It lists those that the writer has found useful and interesting as well as profitable, and enables one to appreciate what treasures, perhaps unknown to him, lie within easy reach. Most of the titles mentioned are easily available in the nearest public library, or can be purchased for little money in such cheap sets as the "Everyman Library."

I. Adventure:
- Dana, Charles—Two Years Before the Mast.
- Verne, Jules—In Search of the Castaways; The Mysterious Island; Michael Strogoff.

II. Autobiography:
- Franklin, Bénjamin—Autobiography.
- Cellini, Benvenuto—Memoirs.

III. Biography:
- Boswell—Life of Johnson.
- Carlyle, Thomas—Heroes and Hero Worship.
- Emerson, Ralph Waldo—Representative Men.
- Kropotkin—Memoirs of a Revolutionist.
- Plutarch—Lives of Illustrious Men.
- Vallery-Radot—Life of Pasteur.

IV. Drama:
- Euripides—Iphigenia in Tauris (and other plays).
- Ibsen, Heinrich—Peer Gynt; An Enemy of the People; The Wild Duck.
- Rostand, Edmond—Cyrano de Bergerac.
- Shaw, Bernard G.—The Doctors' Dilemma; Man and Superman.
- Shakespeare, William—Hamlet; Merchant of Venice; Romeo and Juliet; Twelfth Night (and other plays).
- Sheridan, Richard B. B.—The Rivals; The School for Scandal.
- Sophocles—Antigone; Oedipus Tyrannus.

V. Economics:
- George, Henry—Progress and Poverty.

VI. Essays:
- Bacon—Sir Francis—Essays.
- Emerson, Ralph Waldo—Essays.
- Holmes—Autocrat of the Breakfast Table.

VII. Fables:
- Æsop.

IX. Fiction—*A, American:*
Caine, Hall—The Deemster.
Churchill, Winston—Coniston; The Dwelling Place of Light.
Deland, Margaret—Old Chester Tales; Dr. Lavander's People; The Iron Woman; The Awakening of Helena Ritchie.
Hale, Edward Everitt—The Man Without a Country.
Hawthorne, Nathaniel—The House of the Seven Gables; The Scarlet Letter.
Irving, Washington—The Sketchbook.
Poe, Edgar Allen—Wierd Tales.
Wister, Owen—The Virginian.
B, Canadian:
Parker, Sir Gilbert—Seats of the Mighty.
C, English:
Austin, Jane—Pride and Prejudice.
Brontë, Charlotte—Jane Eyre.
Bulwer, Lord—The Last Days of Pompeii.
Cooper, J. Fenimore—The Spy; The Last of the Mohicans.
Conrad, Joseph—Youth.
De Foe, Daniel—Robinson Crusoe; Journal of the Plague Year in London.
Dickens, Charles—Bleak House; David Copperfield; Tale of Two Cities.
Elliott, George—Middlemarch; Tales From Clerical Life; Romola.
Fielding, Henry—Tom Jones.
Goldsmith, Alvin—The Vicar of Wakefield.
Kipling, Rudyard—Kim; Soldier Stories.
Scott, Sir Walter—Guy Mannering; Heart of Midlothian.
Smollet, Tobias—Peregrin Pickle.
Stephenson, Robert Louis—Dr. Jekyl and Mr. Hyde.
Thackary, William Makepeace—Vanity Fair; The Newcombs; Henry Esmond; The Virginians.
Trollope, Anthony—Barchester Towers.
Ward, Mrs. Humphry—Robert Elsmere.
D, French:
Balzac, Honoré de—Cousin Pons; The Magic Skin.
Daudet, Alphonse—Tartarin de Tarascon; Tartarin on the Alps; Port Tarascon.
Dumas, Alexander—The Three Musketeers; The Count of Monte Christo; The Black Tulip.
Hugo, Victor—Les Miserables; '93; The Hunchback of Notre Dame; The Man Who Laughs.
Loti, Pierre—Fisherman of Iceland.
Sue, Eugene—The Wandering Jew.
E, Russian:
Chekhov, Anton—The Black Monk.
Dostoiewsky, Fedor—Brothers Karamszov.
Tolstoi, Count Leo—War and Peace.
Turgeneiff, Ivan—Smoke.
X. History:
Briffault—Making of Humanity.
Green, J. R.—A Short History of the English People.
Fiske, John—The Critical Period of American History (etc.).
Herodotus—History.
Macauley, Lord—History of England.
Mrs. Oliphant—Makers of Florence.
Prescott, William H.—The Conquest of Mexico.
Wells, H. G.—Outlines of History.
XI. Mythology:
Frost, William Henry—The Wagner Fairy Story Book.
Hawthorne, Nathaniel—Tanglewood Tales.
XII. Natural Science:
Darwin, Charles—The Origin of Species by Natural Selection; The Descent of Man.
Fabre, J. Henri—The Life of the Spider.
Galton, Sir Francis—Hereditary Genius; Inquiry Into the Human Faculty.
Huxley, Thomas H.—Lay Sermons, Lectures and Reviews.
Maetterlink, Maurice—The Life of the Bee.
Mendel, Johan Gregor—Researches upon Hybridism in Plants. (See the translation in the Journal of the Royal Horticultural Society of London for 1901 and 1902.)
Weissman, August—The Germ Plasm.
Tyndall, John—Floating Matter in the Air.
XIII. Philosophy:
Fullerton, George H.—The Philosophy of Spinoza.
Lewes, George—Biographical History of Philosophy.
Locke, John—Essay upon the Human Understanding.
Perry, Ralph B.—The Present Conflict of Ideals.
XIV. Poetry:
Arnold, Sir Edwin—The Light of Asia.
Byron, Lord—Childe Harold; Don Juan.
Chaucer, Geoffrey—The Canterbury Tales.
Dante—Divine Comedy.
Gray, Thomas—Elegy Written in a Country Churchyard.
Goethe, Wolfgang—Faust.
Khayyam, Omar—Rubaiyat.
Longfellow, Henry W.—Evangeline; The Courtship of Miles Standish.
Pope, Alexander—Essay on Man.
David, King—The Book of Psalms.
Milton, John—Paradise Lost.
Scott, Sir Walter—Marmion.
Virgil—Aeneid.
Homer—Iliad; Odyssey.
XV. Religion:
Browne, Sir Thomas—Religio Medici.
Bunyan, John—Pilgrim's Progress.
James, Henry—Varieties of Religious Experience.
Job—The Arrangement in the Modern Readers' Bible by Henry G. Moulton.
XVI. Romance—*A, Extravagant:*
Arabian Nights Entertainment.
Haggard, H. Rider—She; King Solomon's Mines; The Adventures of Baron Munchausen.
Swift, Dean—Gulliver's Travels.
Carroll, Lewis—Alice in Wonderland.
B, Heroic:
Doyle, Sir Arthur Conan—The Adventures of Sherlock Holmes.
Maclaren, Ian (Dr. John Watson)—Beside the Bonny Brier Bush.
Brown, Dr. John—Rab and His Friends.
C, Historical:
Churchill, Winston—The Crisis; The Crossing.
Ebers, George—Uarda; An Egyptian Princess.
Flaubert, Gustav—Salambo.
Ibañeth, Blasco—The Four Horsemen of the Apocalypse.
Kingsley, Charles—Hypatia; Westward Ho!
Le Sage, Alain René—Gil Blas.
Mitchell, Dr. Silas Weir—Hugh Wynne; The Red City.
Sienkiewicz, Henryk—Quo Vadis.
Scott, Sir Walter—Ivanhoe; The Talisman; Quen-

Scott, Sir Walter—Ivanhoe; The Talisman; Quentin Durward.
Wallace, Gen. Lew—Ben Hur.

D, Mystical:
Bain, F. W.—A Draught of the Blue; A Digit of the Moon.

E, Psychological:
Cervantes, Miguel de—Don Quixote.
Clemens, Samuel L. (Mark Twain)—Tom Sawyer.

F, Scientific:
Mitchell, Dr. Silas Weir — Autobiography of a Quack.
Verne, Jules—Twenty Thousand Leagues Under the Sea.

XVII. Travel:
Anson, Lord—Voyage Around the World.
Burton, Sir James Francis—The Pilgrimage to al-Medinah and Mecca.
Darwin, Charles—Voyage of Her Majesty's Ship Beagle.
Kippis, A.—Narrative of the Voyages Around the World Performed by Capt. James Cook.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

A RADIUM REVIEW

DR. C. H. AUFHAMMER

Radium will cure malignant growths where properly given and in sufficient dosage, provided there are no metastases beyond the areas to which the radium rays penetrate. Unfortunately, in the treatment of malignancy, no one can tell how early, or in what direction metastasis will take place and even though one might be able to demonstrate these growths, they are frequently situated in an inaccessible portion of the body. It therefore holds true that hope for the successful treatment of cancer is still found in the *early* diagnosis and the *early* recognition of precancerous conditions with immediate surgical intervention in most instances, preferably preceded and followed by radium exposures.

For the relief of pain in malignancy, radium can be depended upon to be most helpful. There is no other single agent which will give so much comfort in those cases having spinal or bone involvement, and we feel that that alone well repays our efforts.

In uterine carcinoma, may we quote Prof. John G. Clark's conclusions which are those of most men doing this type of work:

1. "As a *palliative* remedy, radium is the treatment, par excellence, in inoperable cases of cancer of the cervix.

2. "In border-line cases in which *formerly* we accepted the grave risks of an operation in the hope of eradicating the disease, we now employ radium, but, in the *certainly* operable class, we still advocate a radical operation followed by postoperative radiation. Many now antedate the operation with radium.

3. "In cancer of the fundus, *even* when far advanced, we perform a hysterectomy, resorting to radiotherapy only in the event of grave operative contraindications.

"In view of our further experience, we now feel that our fourth conclusion may be modified by a limited claim for actual curability. It is as follows:

4. "As yet we claim no cures, but based upon the observation of a considerable number of inoperable cases, which have remained locally healed, from one to three years, we venture the hope that the five-year test will find several survivors."

Some of the uses of radium may be outlined as follows: In malignancy:

1. Cancer of the lip:
   Arising from the skin, radium alone is indicated.
   Arising from the mucous membrane—radium and surgery, with x-ray and radium to the glands of neck and chest.
2. Cancer of mucous membrane of mouth:
   Radium plus fulguration, plus Salvarsan in about 15% of the cases.
3. Cancer of the antrum:
   Radium plus actual cautery.
4. Cancer of the esophogus:
   Radium—at best a very bad condition to treat.
5. Cancer of the stomach and intestines:
   Radium is of questionable value.
6. Cancer of the breast (early):
   Is essentially surgical, preceded and followed by radium. Late cases—radium for palliation.
7. Cancer of the rectum:
   Is very resistant to any treatment. Resection if operable. Colostomy if inoperable to reach tumor mass from above with radium and to reduce irritation.
8. Cancer of prostate:
   If early, removal, plus radium tubes buried at site of operation. Late for palliation.
9. Cancer of bladder:
   Through a suprapubic opening, excision of growth with cautery and the application of radium into the area.
10. Cancer of the uterus:
    (a) of the fundus—hysterectomy followed by radiation.
    (b) of the cervix—more and more evidence is accumulating in favor of radium applications alone.
11. Hypernephroma:
    Offers possible field.
12. Osteosarcoma:
    Radium plus surgery where possible.
13. Lymphosarcoma:
    Excellent results with radium.
14. Melanosarcoma:
    Surgery plus radium; at best only palliative.

In nonmalignancy:

1. So-called port wine stains:
   Radium has a questionable value.
2. Angiomas of all sizes:
   Very excellent results with radium; surgery now is seldom required.
3. Uterine fibroids:
   Radium is indicated in about one-half of the cases with the following exceptions:
   a. When pedunculated.
   b. Those causing acute pressure symptoms.
   c. Any acute inflammatory process, particularly in the adnexa.
4. In uterine hemorrhage:
   Radium is almost a specific when carefully applied.
5. In leucorrhea:
   Radium has some value.

6. Papilomas of the bladder:
   Respond to radium applications when fulguration fails.
7. In the care of hyperthropic and exophthalmic goitre:
   Radium is gaining favor.
8. Leukemias:
   Radiation of the spleen is indicated. After its reduction splenectomy is indicated with transfusions.
9. In enlarged thymus in children it has been found very effective.
10. Experimentation with radium in cataracts is progressing.
11. Glandular enlargements which are nonsuppurative, such as T. B. adenitis, have been cured without scarring. Hodgkin's disease has found considerable use for it.

There are bound to be many exaggerated claims for it in the hands of the unreliable. On the whole, radium has gained for itself an honorable reputation, and perhaps as yet, we have only touched the borders of its possibilities.

MODERN METHODS IN THE DISPENSARY

DR. WM. W. BLAIR

Recent years have seen great changes in our attitude toward the out-patient and his problems. Teaching centers have recognized that in the ambulatorium were to be found the most valuable clinical material: the gravest of disease conditions in their incipiency, minor complaints which rob the wage earner of days of valuable time—all furnishing material of the utmost value to the medical student.

As a point of attack for the solution of the myriad of medical social problems the so-called social worker has found the dispensary a more inviting field than that which reaches out from the hospital itself. So definitely is this fact established that I think we can now say that an out-patient department without its social service organization is a waste of effort and money; whereas with all its parts properly functioning the ambulatory clinic is not in any way secondary in importance to the hospital.

Assuming that your clinic is properly housed and equipped and manned by men of reasonable attainments with one or more trained nurses in attendance, it still has but one leg to go upon until the social service, or more properly the social welfare department, is organized. The latter must be headed by a trained person, either man or woman, who is really the executive officer of the clinic. This person has her clerk, stenographer, trained nurse and social workers, with volunteers in some divisions of the work.

The activities of the social welfare department, however, are of the utmost importance, and are what have given the modern dispensary much of its real significance.

To illustrate: On Dec. 14, 1920, Mrs. M. brought her little girl, aged 11 years, suffering with phlyctenular keratro conjunctivitis. This condition being now looked upon as being at least suggestive of tuberculosis, our treatment did not stop with the care of the little girl brought to us. A visitor went to the home, and reported an older sister who had been compelled to stop work on account of ill health, and a younger child was at home with a "cold." Both the stay-at-homes were brought to the clinic, where a physical examination disclosed the fact that both were suffering from pulmonary tuberculosis. They are admitted to the hospital of the T. B. League for treatment.

Last week a child had been brought in by her older sister, who stated that the child had been blind for a week. The case was diagnosed as being in the early stages of interstitial keratitis (probably luetic). The social service department promptly brought in the parents who gave, one a four plus Wassermann reaction, the other negative. The mother as well as the child were both placed on appropriate treatment while the father will report for further examination.

Under the present arrangement, where a case of gonorrheal ophthalmia is brought in, both parents are sent for and subjected to rigid examination in order that the trouble may be controlled at the source. This also gives us a chance to instruct the mother as to her condition and to warn her that at any subsequent confinements she or those about her should insist upon prophylaxis being employed in the approved manner.

It will be easily understood that to do the work we have planned requires the outlay of more money than anyone has ever thought a dispensary could need; for if the work is indifferently done, by half-paid workers, it had better not be attempted. On the other hand, if the work is successfully carried out much may be accomplished in various lines: first, the care of those needing medical aid; second, an intelligent survey of the social conditions surrounding those applying for continuous relief, as well as the discovery of what may prove to be the starting point of the families' sickness.

To be of greatest service to the people, the dispensary should be brought to the people. Let the hospital occupy the position of a great church, with one or more mission chapels placed right down where the poor live and work. Here will be taken care of all those minor ailments which rob the working man or woman of many odd days of labor, many of these are distinctly minor ones, and soon over if seen early and properly treated.

All this class of thing should be handled by a dispensary, but can be efficiently done, only if the patients will present themselves for daily treatment. This they will not do if the institution is remote from their work or their homes, loss of time and outlay for carfare being considerable factors. A dispensary so placed can do everything which has been outlined as its proper functions. And when this is done your hospital will be free to move to the country, or at least to the suburbs, where there will be quiet, fresh air, green grass and trees—all of which would go a long way toward recovery for those bed-fast patients who are sick in soul as well as body.

CONCLUSIONS

There are several phases which offer inviting possibilities for the development of the dispensary toward its highest usefulness.

First: Greater service to the community. From what has been said it will be seen that when the patient has been treated or otherwise cared for there still remains the social question. The social service department has little interest in the diagnosis and treatment of the particular disease in question, but concerns itself with finding out why this individual is coming to the free clinic instead of consulting a neighboring physician. These problems are often most perplexing, and require much tact and persevering effort for their solution. In the end there is often a crippled child to be placed in the Industrial Home for training, a tuberculous mother to be taken care of, and so on through all the possibilities, so that our workers must be in close and sympathetic touch with every public welfare organization in the city. Our experience is that most of these respond promptly and willingly to every appeal.

Second: The dispensary is an educational agency. The value of the out-patient department for teaching purposes has long been recognized. Its facilities have, however, usually been devoted exclusively to the needs of medical students. Now, with our complete system of records, cross indexed, we can provide the demonstration material for practically any subject coming in the usual course on a day or two's notice.

This, however, does not exhaust our capabilities. In addition to the students from the medical school, those taking the course in Social Welfare at the Margaret Morrison School spend six hours per week for three months during their senior year in our clinic. They learn to write histories, they go out upon cases with our own social workers, they take patients to the various hospitals for admission. In fact they act as understudies for the trained workers, at first going out with a trained worker, and at the last taking the entire responsibility for an assigned case.

A course of lectures is also given to nurses of the Public Health Nursing Association. This year the course will be filled to capacity—about 45 persons.

A few words as to scope: When our new system began to work, we found that we had to cover more of the field than the specialties with which we are chiefly concerned, namely, diseases of the eye, ear, nose, and throat; so that one by one, we have added a dermatological clinic, a tuberculosis clinic, a luetic clinic, an x-ray department, a laboratory and a small library of reference. What we really should have is a complete clinic, covering all branches, but we are at the end of our space and can do no more. As has been described, the clinic should be expanded to cover all the branches of medicine, and then that unit should be duplicated in at least a half dozen centers of the city's population.

Frederick B. Utley, M.D., Secretary.

STATE DEPARTMENT OF HEALTH, HARRISBURG, PA.

State Department of Health officials are pleased with the report that the voters of Berks, Beaver, Cambria, Delaware, Luzerne and Montgomery Counties have by large majorities passed the referendum authorized by a recent act of legislature provided for local county hospitals for the advanced cases of tuberculosis.

Dr. A. P. Francine, Chief of the Division of Tuberculosis, State Department of Health, says: "This is the greatest step forward in the crusade against the white plague in Pennsylvania since the Division of Tuberculosis was created in 1905. These hospitals, when built, will be able to care for this afflicted group in these counties, near their homes and friends, and it is these advanced cases which, in their own best interest, the state sanatoria cannot take. It covers a mortality of 2,044 cases a year out of the 10,000 deaths from tuberculosis.

"The building of these hospitals will enable the state sanatoria to care for curable patients and children, which is their proper function and which follows the modern system, being carried out by other states, of placing the responsibility for care of advanced cases upon local committees."

The act making possible the erection of county tuberculosis hospitals was drawn up by Dr. A. P. Francine, who has made a twenty-years study of tuberculosis. Once the bill was introduced he kept after it and on the last day of the 1921 session it was finally passed. When interviewed, Dr. Francine said, "This result is a splendid beginning, showing that the voters are alive to the necessity of local institutions caring for their own people. It is a fine thing for the man or woman of small means, as it provides for the care of the advanced case, thus removing a source of contagion from their children and their home. This action on the part of these counties has aroused the enthusiasm of everyone interested in public health work."

He stated further that the result was not accomplished by any one group but by the heartiest coöperation by everyone interested in community health. He said, "It was not only by activity on the part of doctors, nurses, public health officials, the State Department of Health, the Pennsylvania Society for the Prevention of Tuberculosis, and local tuberculosis societies, but by the labor leaders and those interested in the welfare of the laboring man and woman; by public spirited civic bodies and by all persons interested in philanthropic enterprise."

At the present time there is a waiting list of 514 persons for admission to the state sanatoria. The three state institutions, Cresson, Hamburg and Mont Alto, with a total capacity of 2,200 beds, are filled.

Your vote on November 8th for a county tuberculosis hospital means life and health for hundreds of incipient cases of tuberculosis, for if your county cares for the advanced cases the state sanatoria, which are ideally located and equipped as places *in which to live* need no longer be used for the very sick patients as a place in which to die.

The State Commissioner of Health says, "The fight against tuberculosis must begin with the child. Give him or her mothers' milk or nontuberculous cows' milk, and protect against contact with tuberculous patients who cannot, or will not, take precautions against passing their infection to others. State sanatoria should train how to protect and to live, and should be filled with such cases as may be arrested or cured and returned to useful citizenship. Far advanced cases should be cared for near home."

R. E. Irwin, Chief, Milk Control Section, State Department of Health, says, "Even typhoid fever has some good points for, since the epidemic of last summer, we are getting many inquiries regarding milk control."

The village of Colver, Cambria County, consists almost entirely of foreign-born citizens. Eighty-two of them own 130 grade cows from which the town's supply of milk is obtained. As these cows are pastured in a common lot, the Cambria County Medical Director urged the owners to pasteurize the milk or have the cows tested for tuberculosis. They decided upon the latter, and an inspector from the Bureau of Animal Industry has made the test and is instructing the owners how to house the cattle and what to do before buying additional cows so that the herd may not become infected.

Colver is the first second-class township in Pennsylvania to follow the Department of Health's recommendation for producing a pure milk supply so far as bovine tuberculosis is concerned.

Fifteen cases of diphtheria in a small central Pennsylvania village—a village in which there is no resident physician or nurse—emphasizes the fact that diphtheria is still actively with us.

The number of cases of diphtheria reported in Pennsylvania during the year 1910 was 14.061; in 1920, 16,959. While the number of cases has increased, the number of deaths from this disease in the last ten years has been cut almost in half by the use of antitoxin.

Diphtheria, like smallpox and cholera, can be practically wiped out. With smallpox this was accomplished by vaccination; with diphtheria, the toxin-antitoxin mixture will do the same.

The State Commissioner of Health says, "The Schick test determines by a local reaction, or the absence thereof, whether or not an individual is susceptible to diphtheria; it determines whether or not an individual has natural diptheria antitoxin in the blood. When such natural immunity does not exist, the logical thing is to secure it by injection of toxin-antitoxin. The Schick test is the first step in the eradication of diphtheria."

As a result of recent observations many physicians believe that the only way to eradicate diphtheria is by a universal injection of all babies under two years of age with toxin-antitoxin. The earlier the better, for observations on 3,000 children show that: 15% of children under 3 months are susceptible to diphtheria; 30% of children from 3 to 6 months are susceptible to diphtheria; 60% of children from 6 months to 1 year are susceptible to diphtheria; 70% of children from 1 to 2 years are susceptible to diphtheria. From that age the percentage decreases until from 10 to 20 years the figure is down to 12%.

Dr. J. Moore Campbell, Chief of the Division of Communicable Diseases, State Department of Health, believes that before diphtheria can be conquered the Schick test and toxin-antitoxin treatment will have to be applied to many adults, especially doctors, nurses, orderlies and maids in hospitals; army and navy recruits, and employees in institutions caring for children. He said, "While the death toll of this disease is taken from the cradle and the younger school children and they should be tested and immunized, if susceptible, it is just as important that susceptible adults be located and treated."

The aromatic scent of crushed wintergreen and the pungent breath of balsam and pine will greet the 220 American doughboys or gobs who are slated for a "chance to live" on the top of South Mountain, five miles up-hill from Mont Alto, Pennsylvania.

The recently created Veterans' Bureau has taken over the large hospital building and staff house located along the driveway about one mile from the main camp of the Mont Alto Sanatorium. This hospital will be under the direction of the State Department of Health and the Commissioner of Health says "the unit will be in full operation by November 5th."

The hospital building had been thoroughly renovated, repainted inside and out, preparatory to using it as a children's home, when the U. S. Public Health Service and the American Legion of Pennsylvania asked the Department of Health to assist in the care of disabled soldiers. Other arrangements were promptly made for the children so that the veterans could be taken, for, built as it is, on the sunny top of South Mountain, this hospital is an ideal place in which to get well.

The boys will enjoy the recreation hall and grounds near the hospital, and will use the model craftshop of the institution, where minds as well as bodies are healed. There is ample room for small truck patches or flower gardens if a man likes to see things grow, and on all sides are woodlands where birds, mosses, trees and flowers lure the fellow whose mind leans that way. About a hundred yards from the hospital is a dense pine copse and the "deer field" where at sunset the lord of the forest comes out to seek the farmers' corn and cabbage.

The Commissioner of Health says, "For many of the boys whose lungs were seared by poison gas or invaded by disease, this opening of the Mont Alto Hospital for their care and treatment means life itself."

PERMANENT HEALTH RECORD TO BE INTRODUCED INTO PUBLIC SCHOOLS

Dr. William J. Crookston, Chief of the Division of School Health, State Department of Health, in arranging for medical inspection in the schools of the commonwealth for the present school term, has provided that the Individual Health Record Card, furnished by the Department of Health, or a record covering similar data, be placed in every school room in the third and fourth class school districts of the state.

The system provides a continuous health record of each pupil for entire school life, the entries being made by the teacher from the School Medical Inspector's record at the time of the annual inspection. Entries of follow-up work and treatment or corrections secured are made from time to time by the teacher or school nurse. A summary of mental progress is provided for on the reverse of the same record. Col. Crookston says, "The cards will remain in the school room continuously, the individual card following the pupil through the various grades, being transferred from grade to grade as promotions are made." "A record system of this type will become a valuable asset to school authorities in determining the factors or causes of retardation in school work."

Due to the tie-up in the State Printery the Department has been considerably delayed in getting these cards to the various school districts, but the new edition is now completed and the card records are being forwarded to the county and district superintendents of schools for distribution. These records are to be in the hands of the teachers prior to the visit of the medical inspector and ready for making entries of defects found at the time of medical inspection.

EXAMINATION OF VACCINATION SCAR

The Commissioner of Health, in accordance with the provisions of Section 1505 of the School Code, as amended by Act of May 20, 1921, has directed school inspectors to examine all pupils for scars of successful vaccination. For all children having the typical scar the medical inspector will enter a confirmation over his signature on pupil's record card. Such entry will preclude further examination for vaccination scar in future inspections.

Thereafter medical inspectors will examine only new entrants and such pupils whose record card does not contain the school medical inspector's confirmation of a successful vaccination scar. Pupils who do not have the scar of successful vaccination must, of course, be revaccinated even though they have filed a certificate of vaccination.

Previous inspections showed that in many instances vaccination certificates were issued without a verification of the resulting scar. Such certificates are illegal and will be decided void. A revised form of vaccination certificates has been issued by the department and is required for admission to school. This certificate is based upon the presence of a scar of successful vaccination and not upon the vaccination operation itself as the operation, due to improper virus, may often be unsuccessful and must be repeated before a successful scar is obtained.

The Commissioner of Health has made the appointments of the medical inspectors for the fourth class school districts of the commonwealth; a total of 960 physicians having been appointed for this work throughout the state, but the inability of the printers to furnish supplies is preventing these inspectors from starting their work.

In the first, second and third class school districts the inspectors are appointed by the local boards of school directors. The inspections, however, are carried on in conformity with the standard requirements of the Commissioner of Health as provided for in the school code.

One hundred thousand people in Pennsylvania have tuberculosis; some of them may live ten years or more. Unless excellent care is taken during that time they will spread the contagion so that another 100,000 will take their place.

The state sanatoria have a capacity of 2,200 beds. Not only is it impossible to take in the great number of advanced cases, but very frequently patients of this type refuse to be moved to a place far distant from home and friends. Meanwhile the children of the household are breathing in the active germs, with the result that they later become public charges.

Realizing that the removal of an advanced case to a distant sanatorium makes dying harder without accomplishing any lasting good, either to the patient or the community, the 1921 legislature made possible the building and maintaining of tuberculosis hospitals by the counties.

Dr. Ellen C. Potter, Chief of the Children's Bureau in the new State Department of Public Welfare, says: "This act, more than any other one piece of legislation, makes possible a wider scope of child welfare work, for if the counties care for the advanced cases, state facilities can be used for the treatment of children who have been exposed to infection, and for the incipient cases who can be restored to a useful citizenship."

Dr. Mary Noble, Director of the Division of Child Health, State Department of Health, believes that the building of such hospitals by counties will aid the child health campaign throughout the state. She said: "Such action will reduce the long waiting list of children who should have immediate care, for tuberculosis is preventable and curable in the early stages."

Commissioner Edward Martin and Dr. John D. McLean, of Philadelphia, Deputy Commissioner of Health for Pennsylvania, attended the fiftieth annual session of the American Public Health Association in New York City. Dr. McLean expresses the opinion that this was the most scientific and best arranged session of its kind in recent years. He said, "The information gathered by the executive officers of the states represented should be of great value in the conservation of health in this country. The conference on sanitary engineering problems was especially valuable from a public health viewpoint."

THE DEPORTMENT OF AN AUDIENCE

Akin to the annoyance caused by talking at a lecture or concert is the habit of coughing. Of course the argument will at once be advanced that this is unavoidable, and in exceptional cases this is true. It is conceivable that a fit of coughing can seize one at a most unexpected moment; but such cases are rare. The simple truth of the matter is that a person with a cold or cough has no place in a public audience. The place for a person with a cold is at home, in bed, or in the fresh air. It may be unfortunate that a cold comes upon one at the very time when we want of all events to attend some particular event, but that is where consideration for others should come in and pointedly so. It has been medically demonstrated that colds are distinctly contagious and that a cough or sneeze in an auditorium lets loose thousands of germs which infect others. There are few things more disconcerting to an audience than to have a person start to cough or sneeze; and it affects and mars the enjoyment of scores of persons in the particular vicinity. Because we are afflicted with a cough or cold we have no right to inflict our misfortune upon others. — Excerpt from "An Editorial," *The Philadelphia Forum Magazine*, October, 1921.

SIGNIFICANCE OF UNEQUAL PUPILS

With the exclusion of eye disease and refractive errors, Earl B. Brooks, Lincoln, Neb. (*Journal A. M. A.*, April 23, 1921) states that unequal pupils are always pathologic. The width of the pupil and its reaction at any given time are the result of the constant antagonism between the contracting fiber of the third nerve, and dilating fibers of the cervical sympathetic. The determination of whether or not we have to deal with an irritative or paralytic lesion will help materially in the recognition and proper interpretation of unequal pupils in any given case. In contusion of the eyeball, besides the concussion, small lacerations and extravasation of blood into the iris muscles account for some of the pupil changes. In head injuries, the dilated pupil corresponds to the side of increased pressure.

REMOVAL OF GALLBLADDER WITHOUT DRAINAGE

A. Murat Willis, Richmond, Va. (*Journal A. M. A.*, March 12, 1921), emphasizes again that the omission of drainage after the majority of the operations of cholecystectomy is a procedure that is perfectly safe, and that the results obtained by such omission are distinctly superior to those following the older method of packing or draining with gauze.

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EDITORIALS

HOLIDAY GREETINGS

The days are fast approaching when throughout the land will be heard the glad salutation of Merry Christmas and Happy New Year. In anticipation of the holiday season the Journal feels that it is more than a privilege to greet its readers in this issue, and wish everyone the greatest pleasures and blessings during the coming holidays.

To many in a business way and through other strange vicissitudes of life, the past year has not been a comforting one. Nor, as events have passed in review, has it been one in which, in the sum total, could one feel the keen gladness that should be in every heart during the holiday time. Business depression has affected in many ways the entire world, and it is our hope that the new year will bring a change to those, whose enterprise and endeavor have not met with a full measure of success.

As for the Journal, we feel that we have much to be thankful for, and while our prosperity has not been as great as the management might have hoped for, yet a reasonable amount of patronage of the advertising pages and increasing assistance on the part of those who desire to see their journal improved—all these have given us material from which to put forth twelve numbers of a 100-page journal. However, whatever may be the measure of success the Journal has met with during the past year, we are still not content, but are looking forward to the coming year as an opportunity to do better and to serve the readers of the Journal to a greater extent. To this end may we not receive the Christmas gift of encouragement and assistance, which a journal such as ours may use to advantage. May we also hope that the medical fraternity of this state shall awaken to the conditions which exist and support the efforts not only of the Journal, but of organized medicine, so that the people of this great commonwealth may be able thoroughly to understand the medical profession in the true light of scientific medicine.

THE PROGNOSIS IN NEPHRITIS

A case of nephritis is often looked upon as more or less hopeless by the attending physician—hopeless in the sense that, although life may continue for years, yet the course of the nephritis will be one of gradually increasing severity until death results. Such an outlook is also common among the laity, to whom the discovery of "Bright's disease" spells doom. This attitude is wrong. Probably no chronic disease offers more hope for improvement and even complete recovery than nephritis. Some cases, of course, will run a progressive down-hill course despite all known methods of aid. On the other hand many cases, probably most cases, will rapidly improve and even get well under intelligent treatment. The physician, on accepting responsibility for the care of a case of nephritis, should bear in mind certain facts which will offer encouragement and aid in outlining a useful course of treatment.

It should never be forgotten that the kidney posseses wonderful powers of regeneration if it is given a chance. In other words, remove the cause of the renal inflammation and the kidney cells will regenerate and resume function. This fact is well recognized by researchers who study experimental nephritis in animals. The administration of renal irritants may be pushed to a point where the kidney will be markedly inflamed; and yet, if the poison be withdrawn, the organ will recover within a few days and show no evidence of having been injured. Clinically, this regenerative ability is to be noted in certain cases of acute nephritis, such as those occurring in scarlet fever or as a result of bichloride poisoning. In these cases, if death does not occur by reason of retention of toxic waste products, the cause will in time be eliminated and complete recovery take place.

This power of recovery is not lost in the chronic types of nephritis, provided there has not been excessive scarring. Therefore, in any case of chronic nephritis the first effort should be to locate the cause and remove it. The earlier this can be done the greater certainty there is of cure. There is not space to take up in detail all of the etiological factors. The more usual causes of nephritis are: febrile diseases, acute and chronic; foci of infection (teeth, tonsils, sinuses, etc.); overlapping of the kidneys by the ingestion of excessive quantities of meat, salt and fluids; constant irritation by the daily use of pepper, spices, whisky, gin, etc.; metabolic diseases, such as gout; exposure to cold. These are a few of the more common causes of nephritis. The recognition of the etiological factor, especially if it is early, will often result in a brilliant cure.

In addition to searching for the cause, the physician should also outline a régime which will as much as possible lighten the duties of the kidneys. The renal function is the excretion of certain waste products. These are: nitrogen bodies resulting from protein metabolism; acids; salt; and water. The diet and habits of the patient should be outlined with a view to keeping these rather low. Excessive exercise should be forbidden. The salt intake should be low and the fluid intake should not exceed three pints in twenty-four hours. By thus relieving the kidneys of a certain amount of work, the process of recovery will be greatly aided.

The frequent examination of the urine of all patients will disclose many cases of nephritis in an earlier stage and give greater success in treatment. Immediately on discovery the physician must bend his energies toward locating the cause and putting the kidneys at rest. The number of cases that recover under his care will be in direct proportion to the time and mental energy expended. Care and effort, with its resulting success, will in time develop a sense of ability and optimism on the part of the physician which will be reflected in confidence and faithful coöperation on the part of the patient. R. R. S.

THE CLINICIAN AND THE LABORATORY

There was a time in many communities when someone, usually a younger member of the profession, in furnishing his office, fixed up a table by a window, placed a microscope and a few bottles of stains on it, attached a handpower centrifuge nearby, and announced his intention of doing laboratory work. If his manner was convincing, the specimens would begin coming in. They would be accompanied with the request, "look this over and tell me what you find," and very often upon the report would be placed the diagnosis. Now almost every place has either a laboratory or such facilities and we pride ourselves that we have traveled far. We have moved some since the early laboratory days, part of the time was quiet and the advances though steady were slow. Then came troubled times, with the "rumble of a distant drum," and there was a great getting together of doctors. Action and quick thinking were applauded, a premium was placed on progress.

Now that the Angel of Bethesda has stirred the troubled waters and we are passing again into a period of quieter days, it might be well to take stock of ourselves and put into effect some of the things that proved advantageous during the crowded times.

One point at least was evident, the correlation of ideas and the grouping of certain workers. In no place does this apply to a greater degree than the relation of the clinician and the laboratory. Every day the good derived from bringing the clinical data to the laboratory is more apparent. When the pathologist is made familiar with the history, progress of the case and the physical findings, a clearer reading of his results is more likely. His judgment is by no means unduly influenced by the knowledge thus gained, for after all it is not a play of wits at which we aim but a solution of the problem by the best way we know.

What is true of the pathological laboratory applies even more to the roentgenologist. It is quite necessary that he be given every bit of information obtainable, and complete data to the x-ray department accompanying a request for interpretation of pathology or injury will usually bring the satisfying answer we desire.

After all comes the opportunity of the clinician to apply all the skill of which he is capable in making a diagnosis. Here the thought occurs that in the big field of diagnostic art, the disciple should have a working knowledge of what he is asking the laboratory man to do. And would it not be helpful for the director of the laboratory to have a broad enough idea of general medicine to be able to merge the thoughts brought to him with the end results obtained in his department, thereby sealing one end of the chain called "group diagnosis"? A. J. S.

WHY MEDICAL FEES SHOULD NOT BE LOWERED

The economic problems of the practicing physician are serious enough. The income of the average physician is such that it makes the weekly wage of many mechanics decidedly attractive. Still the demands in our profession for special equipment and apparatus have gone steadily forward.

Now, the question is being agitated as to whether medical fees should not be lowered to pre-war levels along with the general reduction in cost of living due to reconstruction conditions. Medical fees have never been commensurate with the serivce rendered to the public by the physician. Considering the increased cost of living, the lowered value of the dollar, this inadequacy has been even more marked. Appreciating that the field of medicine is no place for the man who wants to make money, yet surely the laborer should be worthy of his hire.

For many years, prices for all commodities and for services of every description have been steadily mounting skyward. The slight increase in medical fees has been out of all proportion to the rise in most necessities and for all luxuries. A pessimistic view of a medical career, except for those with money, is taken by many far-thinking medical practitioners and medical journals. They point out that the work of medical students throws a serious strain on their mental and physical powers; and that nearly thirty-three per cent conclude that the work is too laborious and take to other careers.

It takes, on the average, from six to seven years to obtain the legal qualifications for an M.D. degree. The cost of obtaining this degree may be put at not less than $7,500. When one stops to consider the modern cost of living in any city, and the special drains on a physician's income, the hardships encountered are unfortunate, and it must be admitted that it hampers medical progress and independence, and exposes many good men to innumerable perils and temptations. Constantly mounting expenses of office maintenance, the upkeep of an automobile, which is more expensive than the horse-drawn gig of other days, and the growing general custom of the physician dispensing drugs to his patients, make practice of the profession more expensive.

Medicine is not a mean money-grabbing trade, but even the most ethical must admit the doctor is entitled to a fair and honest remuneration for his service, training for which is expensive, and which is exacting in its conscientious practice. In the years that are passed the physician was respected for his goodness, his knowledge and his virtue. He was expected to be poor during his lifetime, and when he died to leave his family poor. To-day he is often respected for the grandeur of his establishment, the variety of the mechanical means he has at hand for the treatment of disease and various other qualities, even in the cut of his dress and the make of his car.

The tendency in every profession is to become commercial. It is a trend of the times, and surely a reasonable, just protest against lowering medical fees can be made by the physician. Such a protest must not be considered selfish, but a virtue of self-protection; not the commercialism that is a disgrace to a profession, but a commercialism that renders it more worthy of respect; not the making of fees too high for the service rendered, but simply asking the compensation warranted by the education, skill, and high standard of service physicians have always aimed to maintain. J. B. McA.

RADIO-DERMATITIS

This is the term that should always be used to describe the dermatitis that may follow prolonged or intense exposure to the x-rays or radium, and the term "burn" or "x-ray burn" or "radium burn" should never be used, especially by a physician. There is no burn. A burn implies heat, and there is no heat effect entering into the production of a radio-dermatitis, or what has been mistakenly called an x-ray burn. Radio-dermatitis in its various stages resembles a number of other conditions, and it is rarely possible to make a definite diagnosis of radio-dermatitis purely upon the appearance of the lesions. Generally this diagnosis must be arrived at by exclusion. Without the history of exposure to the x-rays or radium one cannot make a diagnosis of radio-dermatitis. Then one should eliminate all other causes such as localized infections, the result of application of other irritants, and in all instances it must be kept in mind that a combination of irritants plus x-ray or radium treatment greatly increase the tendency to dermatitis. When this occurs it is not purely a radio-dermatitis, but a dermatitis due to a combination of two or more irritants.

Under no circumstances should a physician use the word "burn" in the presence of the patient or the patient's friends, for it gives a misunderstanding that can do much harm, both to the science of radiology, to the radiologists and to the many patients who are benefited by radiation. An erythema which commonly occurs in connection with radiation treatment is not a dermatitis and will disappear without any special treatment and leaves no visible results unless such erythema is repeated a number of times. Ordinarily an acute first-degree dermatitis will disappear under local soothing applications such as Dodd's lotion,

Pulv. Zinc Oxide	dr. 4
Glycerine	fl. dr. 1
Phenolis	min. 30
Aq. Calcis (Fresh)	fl. oz. 8

Sig: Apply locally with a cotton sponge.

without leaving any visible after-effect, and no alarm need be given to any one if such a condition should develop during the process of treatment. When such acute radio-dermatitis of the first-degree develops, and it once heals up, it does not break down a second time unless some complicating traumatism, infection or irritant applications are made. Occasionally an unforseen acute radio-dermatitis will develop in patients who are suffering from an idiosyncrasy which may possibly occur in this condition just as in the idiosyncrasies due to drugs. While this is rare, it can occur.

It behooves us, however, as physicians, to search in all instances for the underlying cause of an acute dermatitis and not attribute every condition that develops during the process of radiation to the effects of the radiation, as is too commonly done, probably as a soothing remark to the patient. Such casual remarks do great harm and interfere with thorough treatment of patients. It may even lead to other more disastrous results.

Every precaution should be taken by the radiologists to prevent any dermatitis, excepting where the disease being treated is of more serious nature than a dermatitis. Such precautions are familiar to those sufficiently expert to give radiation treatment, and can be found described very well in a recent work by McKee, upon X-rays and Radium Treatment of Diseases of the Skin. G. E. P.

HIGHWAY TRAFFIC; THE PHYSICIAN; THE AMBULANCE

The rapid increase of automobile traffic in the various cities and the rules and regulations necessary to govern the same, as put in force by city executives, are such as to demand the attention of the physician who has an automobile. Many of the cities realize that the parking of cars in the congested centers is having a bad effect on business houses and greatly increases the risks incident to fire hazards. In cities where parking is positively prohibited in certain areas, it would seem that some concession should be allowed physicians when they are required to make professional calls within the prescribed district. Physicians must anticipate such parking restrictions and ever be ready properly to place their request before the city executives in regard to this matter. In one of our large cities, a suggestion has been made by the Police Department that any car driven by a chauffeur may be permitted to park in the restricted zone. This would be class legislation, penalizing the owners who cannot afford to have chauffeurs; and, as only a very small proportion of cars owned by physicians are driven by chauffeurs, it would be quite a hardship upon the medical profession. The state should permit, as some other states do, physicians to use an insignia, which will be given proper recognition by the police authorities throughout the commonwealth.

The attention of boards of trustees of hospitals should be called to the relationship of the hospital ambulance to the traffic on the streets. Many accidents and "near" accidents occur where an ambulance is concerned, because the ambulance driver and the interne in charge of the ambulance ignore all common sense observations of the "rules of the road," being imbued with the spirit of supreme "right of way." They seem to think they have the right to maim, wreck and destroy life and property, while en route. This reckless driving is done whether the ambulance is going (1) for a patient for simple transfer to the hospital; (2) for an emergency case, or (3) whether the ambulance is returning to the hospital from taking a patient home. Many patients complain of discomfiture incident to unnecessary fast driving, and the "sharp" turning of corners; many patients also of the unnecessary noise due to the needless clanging of the ambulance bell. All ambulance attachés should be positively instructed to observe caution and care, the same as any other motor vehicle driver while on the streets, the use of the ambulance bell to be reduced to an absolute minimum. Only when the dire emergency demands it, should the ambulance attachés take advantage of the privileges which are accorded ambulances, to speed like fire engines. It is a real pleasure to see a private ambulance in action; there is no unnecessary noise, no clanging of bells, rules and regulations of the traffic are strictly adhered to, the same as all other vehicles (and in this way the patient, the primary object, is safeguarded), the chauffeur is neat, and there is no appearance of institutional atmosphere.

It would be well for all hospitals to place upon their ambulances as part of the equipment, a recordagraph, which makes a record of the speed the ambulance has been driven while away from the hospital, and whenever this record is above a given speed, the ambulance attachés to be held to strict accountability by the superintendent's office. In addition it would be advisable to consider the removal of the ambulance bell. Five years ago a certain hospital installed a recordagraph upon its ambulances, and placed the speed limit at twenty miles. Many accidents were occurring previous to its adoption. Since then the reporting of an accident has been a rarity.

F. C. H.

EX LIBRIS MEDICI

THE LINGO OF THE MEDICS

"Have you ever stopped to wonder how our ordinary talk must sound to our patients? No? Well, it is worth while to consider such things once in a while. We get so accustomed to using technical words and phrases in talking to one another, that we forget that much of what we say to others is really incomprehensible to them and must sound very like gibberish. It is one of the things that writers use to poke fun at the doctors in books."

"Do you think it fair treatment if it tends to make doctors ridiculous?"

"I don't know; sometimes doctors are ridiculous."

"But to call attention to it!"

"Well, I think it a good thing to call attention to everything that is foolish and in the end tends to lessen the confidence that people ought to have in their doctors. It helps them to judge a good doctor—one of the most difficult things the poor layman is up against. How is he to know when I don't? If I am ill, I don't know where to get a doctor, and so I never have any."

"Being a doctor yourself, you don't need any."

"I don't, eh? Well, of course not now, but if pneumonia were to get hold of me, what would I do? Who knows anything about pneumonia?"

"But you said that it was about the doctors in books that you were going to talk to us."

"So it is, but before you can appreciate how human they are you must know and realize how like them we all appear."

"Fire away."

"Well, here is how the talk of a doctor sounded to his patients and others between two and three hundred years ago. This is from Moliére's "Imaginary Invalid," a very amusing play now rarely read. The hypochondriacle patient, Mr. Argon, at the advice of his brother, has just dismissed the doctor, Dr. Purgon, who has treated him for years to his own profit, but to the patient's small benefit, and the doctor is leaving in anger. In the room are the patient, his brother, a servant girl, and the doctor, who opens the vials of wrath with these words:

Dr. Purgon. I would have cured you before long.

Toinette. He does not deserve it.

Dr. P. I was going to cleanse your body and drive out all the bad humors.

Mr. A. (*the patient*). Ah! Brother!

Dr. P. And it wanted but a dozen more medicines to cure you completely.

Toinette. He is unworthy of your care.

Dr. P. But if you do not wish to be cured by my hands—

Mr. A. Dr. Purgon!

Dr. P. Since you have withdrawn from the obedience which a man owes to his physician—

Toinette. That cries for vengeance.

Dr. P. Since you have declared yourself a rebel against the remedies which I prescribed for you—

Mr. A. Eh? Not at all!

Dr. P. I must tell you that I give you up to the intemperature of your bowels, to the corruption of your blood, to the acrimony of your bile, and to the feculence of your humors.

Toinette. That was very well done.

Mr. A. Oh! Heavens!

Dr. P. And I will that in four days you shall be in an incurable state.

Mr. A. Mercy!

Dr. P. That you fall into bradypepsia.

Mr. A. Dr. Purgon!

Dr. P. From bradypepsia into dyspepsia.

Mr. A. Dr. Purgon!

Dr. P. From dyspepsia into apepsy.

Mr. A. Dr. Purgon!

Dr. P. From apepsy into lientery.

Mr. A. Dr. Purgon!

Dr. P. From lientery into dysentery.

Mr. A. Dr. Purgon!

Dr. P. From dysentery into dropsy.

Mr. A. Dr. Purgon!

Dr. P. And from dropsy into a privation of life, whither your folly will lead you.

Here is another, a little later taken from Fielding's "Tom Jones."

On a certain occasion Tom Jones received a blow upon the head, and a surgeon being called, came in and

having viewed the wound, having shaken his head, having blamed everything that was done, ordered the patient immediately to bed.

Later he was asked how the patient did, and answered,

"Better, I believe, than he would have done at this time if I had not been called; and even as it is, perhaps, it would have been lucky if I could have been called sooner. I remember to have been called to a patient who received a violent contusion in his tibia, by which the exterior cutis was lacerated so that there was a profuse sanguineous discharge and the interior membranes were so divilicated that the os or bone very plainly appeared through the aperture in the vulnus of the wound. Some febrile symptoms intervening at the same time (for the pulse was exuberant and indicated much phlebotomy) I apprehended immediate mortification."

When pressed for a definite statement as to the danger in which Jones might be, he answered:

"In danger, ay, surely! Who is there among us, who, in the most perfect health, can be said not to be in danger? All I can say at present is, that it is well that I was called as I was, and it would have been better if I had been called sooner."

When he makes a second visit, the landlady informs him that Jones suffers from an eating fever.

"Very likely," says the surgeon. "I have known people to eat in a fever and it is very easily accounted for; because the acidity occasioned by the febrile matter may stimulate the nerves of the diaphragm and thereby occasion a craving which will not be easily distinguished from a natural appetite; but the aliment will not be concreted nor assimilated into chyle, and so will corrode the vascular orifices and thus aggravate the febrile symptoms."

"It was not only a century or so ago that these things afforded merriment to the laity; they do so now. Here is a quotation only a generation old from Mark Twain's interesting story called "Those Extraordinary Twins," that appears as a sequel to "Puddinhead Wilson." Angelo, one head of a two-headed four-armed monster, had been in a dual and received a bullet through the fleshy part of one arm and a skinned knuckle.

As has been reported before, the doctor was a fool —a kind-hearted and well-meaning one, but with no tact; and he was by long odds the most learned physician in the town, and quite well aware of it, and could talk his learning with ease and precision, and liked to show off when he had an audience, and was sometimes tempted into revealing more of a case than was good for a patient. He examined Angelo's wound and was really minded to say nothing for once; but Aunt Patsy was so anxious and so pressing that he allowed his caution to be overcome, and proceeded to empty himself as follows, with scientific relish: "Without going much into detail, madam, for you would probably not understand it, anyway, I concede that great care is going to be necessary here; otherwise exudation of the oesophagus is nearly sure to ensue, and this will be followed by ossification and extradition of the maxillaris superioris, which must decompose the granular surfaces of the great infusorial ganglionic system, thus obstructing the action of the posterior varialoid arteries and precipitating compound strangulated sorosis of the valvular tissues, and ending unavoidably in the dispersion and combustion of the marsupial fluxes and the consequent embrocation of the bicuspid populo redax referendum rotulorum."

We could not, of course, help laughing at the ridiculous jargon, but we hastened to add that none but an ignoramus would say anything so silly and meaningless.

"Of course not."

"Well, then how does it apply in any way to the well educated doctors of Eastern well advanced communities?"

"Why, you entirely miss the point. I really begin to think that for an editor you are exceedingly stupid, though for a doctor you are probably quite normal. The point of all this is not that doctors say these things, but that their patients and others who hear them talking think they do. What I am driving at is the discovery of the impression made upon the patient by the doctor who talks to him in an incomprehensible language. Does he think more or less of him?"

"That probably depends upon the patient; if sufficiently educated to understand what is meant, it can do no harm, if otherwise, it must impress him that the doctor is much wiser than he."

"Would you say that if the shrewd doctor could arrange to affect his educated patients as most doctors seem to do their ignorant ones, that it would be advantageous?"

"We fancy that it might be in some cases."

"Why, isn't that what most quacks do? Don't they talk an incomprehensible jargon for the purpose of bewildering the patient and impressing him with their superior knowledge and importance?"

"That does seem to be a part of their stock in trade."

"Suppose you come to me feeling unwell and in answer to your question I get off something like this: 'I imagine your trouble to arise in consequence of metabolic disturbance incidental to the absorption of toxic substances through the respiratory mucosa which is in a hyperæmic state as shown by hypersecretion of its glandules. If the condition does not abort, but extends by continuity of tissue to the bronchial vessels, with inflammatory disturbances in their surroundings, bronchopneumonia may supervene, with varying consequences, the exact prognosis of which may be impossible in advance. In favorable cases speedy recovery is to be looked for; in others, a fatal termination is possible;' what would you think?"

"That you were a conceited ass."

"Right, but how would a patient feel about it?"

"Probably that you were profoundly scientific, and that he was fortunate in having consulted you in time to prevent disaster."

"But isn't that a highly immoral deception? What did I really tell him except that he had a cold that might get better or worse? Nothing."

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

A. M. A. SECRETARIES' CONFERENCE

It was your Secretary's privilege to attend, as a guest of the American Medical Association, a Conference of Secretaries of the constituent state medical societies of the Association, held in Chicago, on Nevember 10 and 11. There were present, not only secretaries from all parts of the Union, but also the administrative officers of the Association, and several members of the Board of Trustees. The interesting and intensive discussions of the announced subjects will be published in a bulletin available to the officers of component state and county societies. It is believed that the elaboration of several of the suggestions brought out at the Conference will redound eventually to the benefit of the American Medical Association and its constituent societies.

We were especially interested, however, in the reports from various states of the Union as to the reaction of their societies to post World War conditions. It was the consensus of opinion that much of the existing confusion and divergence of opinion regarding the influence of certain inevitable social changes affecting the medical profession is due to the fact that individualism is so inherent in the character of the average physician that he is slow to grasp the necessity for conference in groups for certain activities. All agreed, however, that notwithstanding the necessity for concerted action by physicians in certain public medico-social relations, the individual general family practitioner must be reëstablished and continued as the fundamental basis of all relations between the profession and the sick. If all the people of any state are to have the best possible medical service during sickness, such service must be rendered largely through the individual domiciliary visits of the general practitioner. Therefore, if certain phases of social progress demand a community health center or pay dispensary, all such must be conducted on a basis requiring of those able to pay, fees equaling those existent of the physicians of a given community. In this way, and in this way only, may we expect to attract and retain competent men in the general practice of medicine.

We were astonished to learn the extent of control over public and state health activities by the organized medical profession in certain states, notably Kentucky and California. In those states it is apparently customary to seek the advice of the medical profession, not only in the medical functions of public health organizations, but in the selection and control of the personnel of such organizations. All discussors united in the view that the state should demand equal preparation and training for diagnosis by all who would heal the sick, with free choice of the methods of treatment available to all sane adults. All agreed that the function of the state in the administration of its medical activities ended with the control of contagious diseases, the control of water and food supplies and sewage disposal, leaving the treatment of sickness as the problem of the individual physician.

We believe that the bulletin referred to will be well worth reading, and that the time thus spent will repay those taking advantage of the opportunity. We were impressed with the earnestness of the administrative officers and the members of the Board of Trustees of the American Medical Association in their endeavors to render more efficient service to the individual members of the Association. We were pleased with the opportunity of reviewing the vast machinery involved in the service of the American Medical Association to the health and welfare of our country. The extent of the work involved in the Council on Health and Public Instruction, the Council on Pharmacy and Chemistry, and the Council on Medical Education and Hospitals may be appreciated best by those who have visited the Association building.

CREDIT WHERE CREDIT IS DUE

The Armstrong County Medical Society recently adopted a dignified set of resolutions protesting against the unfair position that the medical profession occupies in the eyes of the public through the medium of whiskey regulations and the more recent regulations as to the prescribing of beer and light wines. If it be true that but one in five of the physicians of this country has taken out the necessary permit to prescribe whiskey, we dare say that not one in fifty physicians will avail himself of the opportunity to prescribe beer.

Thinking people must know that physicians in general practice, in hospital laboratories and clinics, in life insurance companies and coroners' offices are largely responsible for the gradual but none the less marked banishment of alcohol from the public bar and dining table to its proper place on the drug shelf. Impartial reports from the medical profession have impressed business men, employers and teachers with the fact that alcohol imposes a definite destructive penalty on those who consume it. Alcohol has by cold scientific methods been rightfully cataloged with infection, injury and neglect as one of the few causes of physical decay. It is no longer considered as a food. It has gradually lost its standing as a drug, and is now shunned by most far-seeing people, as are typhoid or tubercle bacilli.

The propaganda against alcohol, characterizing it a demon, was not particularly effective; but, when in the past quarter of a century, the scientific findings of the medical profession discredited alcohol's food value and revealed alcohol in its true rôle as a narcotic poison, drinking began to lose its social flavor and is rapidly becoming to be known as a mere drug indulgence. Very few men and women have refrained from using alcohol on account of fear that they might become drunkards, but they have become susceptible to the material proofs that alcohol in its effects is narcotic and destructive.

In his address of welcome to the State Society, October 4, 1921, Honorable J. Hampton Moore, Mayor of Philadelphia, said: "I know I am speaking to those who would have the same contempt for the disreputable physician that I, as the Mayor of this municipality, in attempting to enforce the law, would have; and I say the physician who knows himself and who knows the law and who abides by the law in the exercise of those rights and privileges which have been conferred upon him has a responsibility, and a very special responsibility, in the matter of these prohibitory laws, and he should exercise his rights with the wisest care and greatest caution, so that this stultification of the individual, this increase of the addict habit, this growth of crime may never be laid at the door of the physician."

Several plans have been suggested to portray to the public the slight remaining contact by the prescription route between the majority of physicians and alcohol. One very practical plan is for the county medical society to require of its members a duplicate of all prescriptions written for whiskey, brandy, wine or beer. The total number written in twelve months, compared with the number of physicians and inhabitants in the county, would graphically set forth not only the number of prescriptions written, but the relation of those physicians writing such prescriptions to the organized medical profession.

1922 DUES

On January 1, 1922, the benefits of membership in your State Medical Society will have expired unless you have been wise enough to pay in advance your 1922 dues to your county medical society. It is true that our Constitution and By-Laws make provision that up until March 31, 1922, you shall be entitled to all State Society benefits whether your dues are paid before that date or not. Not many among us, however, care to accept benefits except as they are paid for. Permit us to suggest humbly, therefore, that you immediately forward to the secretary of your county society your check in full for your 1922 dues. You will thus lighten the labor of the officers of your county and state society, lessen the expense of administering your society's activities, and you will at the same time enjoy the enviable position of those who meet promptly their just obligations.

Rapidly increasing opportunities for properly relating the organized medical profession to the public create new demands upon the treasuries of many medical organizations. In Ohio the Cuyahoga County (containing the city of Cleveland) Medical Society has increased the annual dues to all active members (those under sixty-five years of age and in practice more than three years) to $40.00. In our own state the Allegheny County Medical Society has just created a Department of Public Relations whose special representative, a paid officer, not a member of the Society, is to direct public health educational propaganda.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to November 15:

Allegheny: *New Members*—Roy E. Sleppy, 408 May Bldg.; Joseph G. Wheeler, Jr., 7045 Jenkins Arcade, Pittsburgh; Ray D. Cassaday, 378 Butler St., Etna. *Removal*—William C. Hocking, from Duquesne to 550 Worton Ave., Los Angeles, Calif.

Berks: *Transfer*—Lewis R. Rothermel, Shillington, from Lancaster County Society.

Bradford: *Death*—Samuel W. Badger (Bellevue Hosp. Med. Coll., '73), of Athens, Sept. 27, aged 74.

Columbia: *Removal*—Clark S. Long, from Benton to 605 Walnut St., Lansdale (Montgomery Co.).

Dauphin: *New Member*—Richard Yoffe, 721 N. Sixth St., Harrisburg.

Delaware: *New Member*—J. Lawrence Widmyer, Drexel Hill.

Elk: *New Member*—John B. Fullmer, Emporium (Cameron Co.). *Transfer*—Harry S. Falk, 501 Commerce Bldg., Erie, to Erie County Society.

Erie: *New Members*—Ellen Walker Berry, 609 Masonic Bldg.; J. D. Stark, 960 E. Sixth St., Erie.

Reinstated Member—George T. Barrett, 1001 French St., Erie. *Removal*—Jesse C. Stilley from Erie to Ludlow (McKean Co.).

Fayette: *New Members*—R. R. Morrison, Fairchance; William H. Robbins, Vanderbilt; R. E. Bell, Normalville; W. F. Keck, Republic; H. E. Ralston, F. D. Roelkey, Uniontown.

Huntingdon: *Death*—Henry Clay Chisolm (Hahnemann Med. Coll., '88), of Huntingdon, Oct. 25, aged 62.

Lancaster: *New Members*—George W. Stoler, Lancaster General Hospital, Lancaster; Harry S. Ziemer, Adamstown.

Lebanon: *Transfer*—John H. Bryner, Quentin, from Dauphin County Society.

Luzerne: *Reinstated Members*—Roy Truckenmiller, Freeland; Edward R. Roderick, 92 So. Franklin St., Wilkes-Barre. *Transfer*—Fayette C. Eshelman, 436 Miners Bank Bldg., Wilkes-Barre, from Venango County Society.

Montour: *Transfer*—J. Allen Jackson, Danville, from Philadelphia County Society.

Montgomery: *New Members*—J. A. Klotz, East Greenville; Isadore Hurwitz, Norristown. *Removal*—S. Nelson Wiley from Vineland, N. J., to Blythewood, Greenwich, Conn. *Death*—Joseph K. Weaver (Jeff. Med. Coll., '67), of Norristown, recently, aged 83.

Philadelphia: *New Members*—Joseph C. Keller, 709 West Erie Ave.; Gershon Ginsburg, 1534 N. Eighth St., Gladys Girardeau, The Covington, Philadelphia. *Reinstated Members*—Vram S. Nedurian, 5467 Pine St.; Aller G. Ellis, Jefferson Hospital, Nineteenth and Sansom Sts.; J. K. Kurz, 7111 Chew St. (Mt. Airy); A. Reichman, 2237 S. Fifth St.; Leon Brinkman, 1402 Spruce St.; John J. Shaw, 314 S. Broad St.; M. T. Sullwan, 2767 N. Twenty-fifth St.; Joseph H. Schoenfeld, 2534 N. Sixth St.; Arthur R. Wilkinson, 2231 Oxford St.; John L. Laird, 6114 Germantown Ave., Philadelphia; E. M. Tully, Mantoloking, N. J.; Frank S. Ferris, 101 Easton Road, Glenside. *Deaths*—Herman A. Brav (Med. Chirurg. Coll., Phila., '98), of Philadelphia, Oct. 12, aged 51; M. Howard Fussell (Univ. of Penna., Phila., '84), of Philadelphia, Oct. 15, aged 66; Walter L. Pyle (Univ. of Penna., Phila., '93), of Philadelphia, recently, aged 50; Neafie Richardson (Medico-Chirurg. Coll., '06), of Philadelphia, Oct. 30, aged 49; William M. Alrich (Univ. of Penna., '89), of Philadelphia, Oct. 27.

Schuylkill: *Reinstated Member*—Elwin W. Keith, Minersville.

Washington: *Removal*—A. J. B. Pearce from Wilmerding to South Heights (Beaver Co.).

Westmoreland: *Removal*—W. Irvine Hamer from Greensburg to 621 Fulton Bldg., Pittsburgh (Allegheny Co.).

Union: *Death*—Thomas C. Thornton (Univ. of Vt., '62), of Lewisburg, suddenly, Oct. 21, aged 82.

York: *Removal*—David C. Posey from Brogueville to Christiana (Lancaster Co.).

The following payment of per capita assessment has been received since October 17. Figures in first column indicate county society numbers; second column, State Society numbers:

Oct.	18	Luzerne	232–233	7277–7278	$2.50
	20	Fayette	119–124	7279–7284	10.00
	22	Elk	28	7285	2.50
	28	Schuylkill	105	7286	5.00
	29	Allegheny	1179	7287	2.50
Nov.	1	Erie	128	7288	5.00
	5	Erie	126–127	7289–7290	5.00
	9	Montgomery	150–151	7291–7292	5.00
		Lancaster	127–128	7293–7294	5.00
		Philadelphia	2042–2056	7295–7309	67.50
	10	Dauphin	153	7310	2.50
	12	Allegheny	1180–1181	7311–7312	5.00
		Delaware	90	7313	2.50

ERRATUM

Under Official Transactions, page 131 (November, 1921, Pennsylvania Medical Journal), the name of Dr. Wylie J. Stewart, Coraopolis, appears in the list of Delegates to the American Medical Association for 1922 and 1923. This should read Dr. Walter S. Stewart, Wilkes-Barre.

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary
212 N. Third St., Harrisburg, Pa.

LOCATIONS FOR PHYSICIANS

ATTENTION OF THE MEDICAL PROFESSION OF PENNSYLVANIA

For some time in the past our attention has been called repeatedly to the statement made in medical and lay journals of this and other states as to the need of physicians in certain localities. These localities are usually noted as being in smaller towns and in rural sections.

The purpose of this article is to call the attention of the medical profession of the state to this subject, so that we may establish some sort of clearing house by which the needs may be met in any given district of the state where a physician or physicians should locate to give people of that district adequate medical service. It is also our desire to suggest to physicians, who are desirous of making a change in location, a new field for their work, or to those who have not located we would look for some place in which they might begin the practice of medicine.

We have secured sufficient evidence to show that there are in Pennsylvania several localities in which men well along in years are still in practice and are endeavoring to cover the district and fill the peoples' need of medical service. It is certainly commendable to feel that the profession still has in its ranks the true and tried family doctor, but his life is not guaranteed, and the time will come when he must lay down the burden to be taken up by some one else.

The present trend of desire on the part of the younger practitioner is to seek larger cities wherein the luxuries of life may be found, and probably with the thought of escaping the harder and more trying duties that are associated with country practice. We believe that this condition must be overcome by the willingness of men to begin their experience in the practice of medicine and to cultivate the self-reliance needed in the practice of the healing art in the place, than which we know none better, wherein that confidence may be quickly acquired—the smaller towns and rural districts. It is here that the true mettle of the practitioner is tried, and if he has the ability to meet every emergency for which he was educated in medicine his success in medical practice will be assured.

We wish to appeal to the profession to express to this office their knowledge of any locality wherein positions are desired, or the desire of any physicians to relocate, and we will make provision to aid the people of the communities needing medical practitioners as well as to aid the practitioners in securing locations. Can we not in this way answer the question which the people of this and other states are asking, viz: are the people receiving adequate medical service?

OUR ADVERTISERS

Patronize those who patronize you

NEW LABORATORIES FOR ABBOTT'S

A substantial group of eight concrete buildings in North Chicago looms as evidence of the growth that is said to follow true service.

When the war cut off the import of medicinal chemicals used quite generally by physicians in this country, The Abbott Laboratories were among the first to provide for the urgent home demands. Such drugs as Barbital, Procaine and Cinchophen were produced in this period by its chemists under license from the Federal Trade Commission. Since that time there has been a continuously increasing demand for these and other high grade synthetics, under the Abbott label, necessitating an enlargement of manufacturing space and facilities. Along with this, the research department of the firm is being enlarged and valuable new agents for the physician's use are being developed.

The executive offices of The Abbott Laboratories will be maintained at the present address, 4739-53 Ravenswood Ave., Chicago.

CALENDAR OF SUITS FOR OCTOBER

October 1st:
- (a) Deformity resulting from fracture of radius and ulna.
- (b) Husband's suit for loss of services of wife due to hot water bottle burn.
- (c) Claims serious and permanent injury in obstetrical case.
- (d) Gauze left after operation.

October 4th:
- (a) Diagnosed as "flu," scarlet fever developed, patient died.
- (b) $20,000.00 asked as damages for distress caused in treatment of ear.
- (c) General dissatisfaction with dental work.

October 5th:
- (a) That doctor did not perform operation authorized but did another without consent.

October 7th:
- (a) Claims appendectomy without consent.
- (b) Skin eruption not possible of certain diagnosis, treatment unsatisfactory, sued to "set off" fees.
- (c) Patient said to be dying of mercurial poisoning due to treatment of ulcer.

October 8th:
- (a) Operation did not prove diagnosis, patient asks $10,000.00 for alleged mistake.
- (b) Died in dentist chair from anesthetic.

October 11th:
- (a) Dentists' suit for fess excites counterclaim alleging damage during treatment for pyorrhea.
- (b) Unsatisfactory result in fracture case.

October 13th:
- (a) Left drainage tube in wound.
- (b) Hot water bottle burn in patient's own home.

October 15th:
- (a) Claims needle broke and left in flesh after repairs in an obstetrical case.
- (b) Charges dentist left root in jaw after jaw bone was broken.

October 17th:
- (a) Fracture during removal of impacted molar.
- (b) Dropped wrong medicine in eye, lost sight.
- (c) Tongue cut during preparation of tooth for crown.
- (d) Failed to remove all glass after automobile accident.
- (e) Gauze left in wound.
- (f) Claims infection from reduction of fracture.

October 19th:
- (a) Left silver-plated pessory in wound; patient failed to return, then sued doctor.
- (b) Patient lurched, dentist cut chin, now wants $20,000.00.
- (c) General repair of teeth alleged unsatisfactory.

October 20th:
- (a) X-ray burn disfigured child.

October 21st:
- (a) Alleged after-treatment following operation permanently injured health.

October 22d:
- (a) Bad results in fracture case.

October 25th:
- (a) Claims contracted contagious disease from defendant doctor, and died.
- (b) Complications in confinement due to doctor's carelessness and neglect.
- (c) X-ray burn in treatment of carcinoma.

October 26th:
- (a) Facial disfigurement after extraction of molar.
- (b) Pain and anguish from ill-fitting bridge.
- (c) Death after injection of toxin antitoxin.

October 27th:
- (a) Crooked and weakened arm from colles fracture.

October 28th:
- (a) Poor result in fracture of radius and ulna.
- (b) Alleged malpractice to offset suit for fees after operation.
- (c) Alleges lockjaw resulted from use of unsanitary dental instruments.
- (d) Complications following tonsilectomy, charged to doctor.

October 29th:
- (a) Preparation of cavities caused infection requiring operation.
- (b) Lack of attention following operation for hernia.

October 31st:
- (a) Allege failure to cure a social disease.

—Reprint from circular of the Medical Protective Company of Fort Wayne, Indiana.

THE MODERN METHOD OF FEEDING INFANTS

Modern infant feeding calls for a formula suited to the individual requirements of the individual baby. The physician now realizes that an infant deprived of breast milk must be fed as an individual. The nourishment from the infant's food is principally derived from cow's milk. The "foods" contain no mysterious life-giving elements but are used as modifiers. As such they are indispensable for their carbohydrate content, the added carbohydrate being necessary to make up for the loss of carbohydrate when cow's milk is diluted with water. It is also important that these "foods" are given as carbohydrates and should not contain a mixture of vegetable protein and fat, since the cow's milk supplies animal protein and fat in proportion suitable for the growth of most babies.

Infant feeding should be directly under the control of the physician. Realizing this important fact, Mead Johnson & Company of Evansville, Indiana, have manufactured a line of Infant Diet Materials suitable for the individual requirements of the individual baby. These products do not carry laity directions on the trade packages. Such directions on a package of food is the unsurmountable wall that differentiates between individual infant feeding and indiscriminate infant feeding.

Mead's line of Infant Diet Materials consist of Mead's Dextri-Maltose (Dextrins and Maltose), Barley Flour, Dry Malt Soup Stock, Casec (Calcium Caseinate—for preparing Protein Milk), Arrowroot Flour and Cerena, all of which are supplied without any directions on the packages. Over and beyond the gratifying results obtained from Mead's products, the physician is given unlimited scope to his own creative talents, hence there will be a greater number of better babies in his immediate neighborhood. The mother who uses Mead's Diet Materials at the direction of her physician is disposed to place credit for the welfare of her baby where credit belongs, i. e., to the doctor. The Mead Johnson policy means the realization of an ethical ideal.

Interesting publications on Infant Feeding, prepared by Mead Johnson & Company are supplied on application. Letters addressed to them will receive personal attention from their Scientific Department.

INJECTIONS DE LUXE

Not for many a day has anything caused as much interest and comment among the medical profession as has the Mulford Hypo-Unit.

On all sides physicians are discussing the ingeniousness of this injecting device, which is nothing more than a small collapsible tube with a hypodermic needle attached—so simple a contrivance that it is surprising someone did not think of it long ago.

Some physicians are impressed by the fact that it saves them the bother and fuss of making solutions and sterilizing syringes; others like the idea of using a separate syringe and needle for every patient and for each injection; still others are attracted by the economy and saving of time. Whatever the reasons, the fact remains that the Mulford Hypo-Unit is growing in popularity by leaps and bounds.

We have recently seen a very handsome metal pocket case, containing twelve Hypo-Units. It is no larger than a cigarette case, fits the vest pocket, and will appeal to a great many physicians. If you would like to have a sample Hypo-Unit, and further detailed information regarding same, we suggest that you write to H. K. Mulford Company, Philadelphia, Pa., and mention this publication.

HIGH-POTENCY ANTITOXIN

The reticence which formerly characterized the attitude of certain physicians toward the injection of large doses of antitoxin in cases of diphtheria has almost entirely disappeared. This, in no small measure, is attributable to the enterprise of biological manufacturers in developing new and improved methods of antitoxin production.

The diphtheria antitoxin put out by Parke, Davis & Company is remarkable for its concentration and purity. The total solids in this product have been reduced to a minimum, thereby practically eliminating the possibility of anaphylactic reactions. The high concentration of this antitoxin makes feasible the injection of an adequate number of antitoxic units in small bulk—a most desirable quality, since the pain and discomfort resulting from the injection are negligible and, if given subcutaneously or intramuscularly, absorption is hastened.

IT MUST BE MADE RIGHT FROM THE START

Norway is best known for her midnight sun and her immense harvests of the deep. Nature has nowhere been so prodigal in providing ideal conditions for the spawning, feeding and development of the true Gadus Morrhuæ, than in the waters surrounding the far-famed Lofoten Islands, Norway. For a century or more, cod liver oil has been recognized as a dependable and easily absorbed nutrient and more recent investigations reveal that it is an exceedingly fruitful source of the anti-rachitic vitamines. Cod liver oil to be utilized to fullest extent by the system should be pure and sweet and free from admixture with inferior noncod oils and also free from admixture with blood and gall—due to careless and unscientific handling of the livers. Cod liver oil is as delicate as butter and in the selection and processing of the livers, should receive as much care as science has thrown around the production of pure milk. It must be made right from the start! For nearly half a century the producers of the "S. & B. Process" Clear Norwegian Cod Liver Oil have concentrated their endeavors and specialized upon the product of the livers of the true Gadus Morrhuæ. Never satisfied with the quality of oils offered on the market, several years ago Scott & Bowne established their own cod liver oil plants in Balstad (Lofoten), Norway, where under most exacting, modern scientific and hygienic conditions, the "S. & B. Process" is produced. This high grade oil is then brought overseas in special containers to be refined in the unique S. & B. Laboratories in America. The "S. & B. Process" is the only cod liver oil made in Norway and refined in America. This oil is guaranteed a 100% product of the livers of the true Gadus Morrhuæ and absolutely free from admixture with other oils or impurities. Physicians may prescribe the "S. & B. Process" with an assurance that his patient will always receive the nutrient and vitamic virtues of cod liver oil in truest form. We are reliably informed that liberal samples of this high grade medicinal cod liver oil will be sent to physicians on request. The address is, Scott & Bowne, Bloomfield, N. J.

County Medical Societies

REPORTERS OF COUNTY SOCIETIES:

Adams—Henry Stewart, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—John W. Bancroft, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—J. Hayes Woolridge, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
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Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. j. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederck R. Bausch, M.D., Allentown.
Luzerne—Walter L. Lynn, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Fred Wade Paton, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—O. M. Weaver, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
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Northumberland—Charles H. Swenk, M.D., Sunbury.
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Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percy E. Whiffen, M.D., McClure.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Martin E. Herrmann, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Homer P. Prowitt, M.D., Washington.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—J. F. Trimble, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

November, 1921

COUNTY SOCIETY REPORTS

ALLEGHENY—OCTOBER

The regular monthly scientific meeting of the Allegheny County Medical Society was held on Tuesday, October 18, 1921, 8:30 p.m., at the Pittsburgh Free Dispensary Building, 43 Fernando Street, Pittsburgh, Pa., with the president, Dr. Carey J. Vaux, in the chair. Attendance: 165.

"Precancerous Condition of the Cervix" was presented by Dr. R. R. Huggins, who, in connection with the cancer problem, discussed prevention of diseases in general. The efforts along this line have been very gratifying, especially in tuberculosis, which was brought to the attention of the public, and their support was obtained with a very beneficial result on the disease. This has not been true of cancer. Nothing definite as to the etiology can be stated, although constant irritation seems to be of definite importance. There are a number of points of interest, which Dr. Huggins enumerated about 16 years ago at a meeting of the Allegheny County Medical Society, which are just as true to-day as they were then. These are: First, cancer begins as a benign growth. Second, all cancers have a precancerous stage. Third, all cancers are local at one time. Fourth, cancers have a varying degree of malignancy. Fifth, acid media of stomach and vagina predispose to cancer formation. In a preventive way erosions on the cervix should be taken care of, as they are all sessile adenoma. It is axiomatic that all women who had borne children should be examined at 40 for erosions or other changes, and treated, if necessary. Dr. Huggins illustrated erosions of the cervix by a number of drawings. In discussing the paper Dr. E. A. Weiss spoke of the friability of the cervix as the most important point in differential diagnosis. Dr. E. N. Milligan agreed with the speaker. Dr. Huggins closed the discussion, emphasizing the necessity of examining patients carefully for the possiblity of malignancy at the age of 40.

Dr. T. W. Grayson took up the subject of "Wood Alcohol Poisoning." In speaking of wood alcohol poisoning, he emphasized that methyl alcohol is oxidized slowly and excreted as formic acid, and that the optic nerve and, in some cases, the pituitary body are frequently disturbed by it. There are two types of wood alcohol poisoning, acute and chronic. Acute poisonings usually follow alcoholic debauches, where methyl alcohol has been substituted for ethyl alcohol, while the chronic ones usually occur in tradesmen who work with methyl alcohol. In making the diagnosis the following points of interest should be considered: first, history of an alcoholic debauch; second, increased elimination of formic acid by the urine; third, elimination of methyl alcohol by the urine; fourth, nausea; fifth, weakness; sixth, blurred vision and blindness; seventh, thirst, pain in the back; eighth, cyanosis of skin; ninth, headache and vertigo; tenth, all other symptoms of acidosis. As methyl alcohol poisoning is a severe form of acidosis, it should be treated as such. Four hundred to 500 c.c. of 5% sodium bicarbonate solution intravenously, and the washing out of the stomach are the most important measures in therapeusis. This paper was ably discussed by Dr. Albert J. Guerinot, who reviewed the present day literature on the subject and advocated lumbar punctures as an additional measure. Dr. H. P. Ashe was of the opinion that the name of alcohol should be taken off of labels in connection with wood alcohol, and some other name substituted. Dr. Gray closed the discussion.

"Induction of Labor by the Use of Castor Oil and Quinine." Report of 200 cases. Presented by Dr. A. C. Williamson. In induction of labor using castor oil and quinine, one can be successful in approximately fifty per cent of the cases. The quinine is given in five grain doses every half-hour until twenty grains have been given, the initial dose starting when the oil is effective and an enema, F. 116, has been administered. Occasionally, there will be tetanic contraction that may cause definite fetal distress and the operator should interfere at once. Age and fetal position apparently play no part in the induction. The conditions necessary for success are: that the estimated date is due or past due; that the head is fixed or beginning to fix; that the cervix is partially obliterated, admitting a finger through the external os easily, and the uterus irritable, contracting rather readily under manipulation. The castor oil apparently causes a definite increase in peristalsis and the contractions initiated in the uterus are strengthened in rythm and tone by the quinine. Quinine of itself will not initiate labor and experimentally it has been shown that it will not affect a closed os but will merely reinforce contractions already present. The method is so easy and so free from danger that, with a success of fifty per cent, it always deserves a trial. In the discussion of this paper, Dr. Paul Titus asked for serious consideration of the method because of the harmless character of the procedure, coupled with its exceedingly useful phase in a large percentage of cases. Dr. J. Gilmore did not obtain as good results as the speaker, and he did not advocate its use.

"Thiocol Treatment in Certain Forms of Tuberculosis," presented by Dr. T. J. Elterich, who has been using thiocol for a good many years, since Sloss advocated it. In tubercular peritonitis he gives thiocol internally, and it does not prove an irritant even in large doses. Green soap should be rubbed into the abdomen for 15 minutes every second day. Rest, in addition to the above measures. He reported the following cases: Case No. 1, R. N., 3 years old, took ill in 1910, and under the Sloss treatment recovered in one year, and is now in perfect health. Case No. 2, Babe V., age 7 months, weight 7 lbs.; diagnosis: tubercular peritonitis. Within one year this patient also recovered and is now well. Dr. Elterich finds this procedure very useful in cervical adenitis, as in tuberculosis. This paper was discussed by Dr. T. G. Greig and Dr. Manley, who find it very useful in phlyctenular keratosis. Dr. Elterich, in closing the discussion, attributed the beneficial action of green soap to counter irritation.

Dr. R. E. Brenneman's presentation "Treatment of Epitheliomata of Face and Mouth by Radium" was illustrated by a number of photographs. Dr. Brenneman took up the treatment of malignant conditions in the mouth with radium and electro coagulation, as advocated by W. L. Clark, of Philadelphia. Of the 18 cases reported, 6 are well, 3 are under treatment, and 9 are dead. Dr. Russell Boggs opened the discussion and emphasized the value of radium in malignancies of the mucous membrane of the mouth. Dr. Brenneman closed the discussion.

Dr. G. W. Grier took up the question of "X-ray Treatment of Superficial Malignant Conditions." He reported 315 cases of superficial malignancies. Each one of these was treated by massive doses of x-ray (four erythematous units). From one to four massive doses were given, dependent on the type of lesion treated. All the x-ray given should be within the first two weeks. After treatments, the lesions should be kept exposed; no salves or lotions should be applied. For fear of producting an endarteritis obliterans, no filter should be employed. Of the 315 cases of these malignancies reported, in about six weeks 296 were cured, 8 recurred, and 11 did not report. In the discussion Dr. Lester Hollander emphasized the importance of difference between small doses of x-ray, which stimulate, and massive doses, which destroy. Dr. G. W. Grier closed the discussion.

"Management of Third Stage of Labor." In this presentation Dr. F. W. Mathewson reported 166 obstetrical cases, where he permitted the slow separation of the placenta without interference, and where he delivered the placenta about a half-hour after the birth of the child, with a slight traction on the cord. Of 166 cases, 162 gave him no annoyance, with 4 he had slight difficulty. In the discussion, Dr. Paul Titus called attention to the fact that traction on the cord at times causes inversion of the uterus. He also emphasized that delay of the third stage of labor may be caused by previous administration of pituitary extract, or a distended bladder, which should of course be relieved. Dr. D. Katz and Dr. R. R. Huggins approved of the method of Dr. Mathewson, who closed the discussion. LESTER HOLLANDER, Reporter.

BERKS—NOVEMBER

At the November meeting of the Berks County Medical Society, Dr. Harry F. Rentschler reported the following case of lead encephalitis:

A. B., aged 31 years, white. Occupation, stone enameler. Admitted to hospital October 3, 1921. Symptoms: weakness, giddiness and nausea. Family history: Married 9 years, wife and two children living and well; mother and father living and well. Had usual children's diseases, but since adolescence has always been well. No venereal history.

History of present illness: Trouble began about ten days ago with a severe paroxysmal pain in the upper abdomen, which continued severe until the end. Also had a persistent headache. Appetite was fairly good, although food nauseated him. The pain was not influenced by food. During the paroxysms of pain the abdomen retracted and vomiting ensued. There were no urinary symptoms, cough or dyspnea. Physical examination showed that the eyes were normal, the pupils reacted to light and accommodation. Nose normal. Mouth showed teeth in rather poor condition and bluish lines on the gums. Thoracic and abdominal organs normal. The reflexes were considerably exaggerated. From October 3d to 7th patient seemed to progress favorably. October 8th complained of dimness of vision. There was diplopia, increased to the left, less marked when looking to the right. Fundus of left eye had optic neuritis, especially the outer ⅔ of nerve; also a very faint capillary hemorrhage in this area; otherwise normal. In the right eye the neuritis was more marked. There was also partial paralysis of the external recti, especially the left. Pupils at this time reacted normally to light, but not to accommodation. October 10th patient had a convulsion at 2:30 a.m. Convulsions continued throughout the day at irregular intervals. Temperature rose to 105, blood pressure to 148. Patient died October 12, 1921, after having had 46 convulsions. The case was diagnosed as lead poisoning.

CLARA S. KEISER, Reporter.

BUCKS—NOVEMBER

The Bucks County Medical Society held its seventy-third annual meeting at Doylestown, November 9th. Forty-five physicians attended and the spirit of progression and loyalty for the occasion was excellent.

The society—a rural one in every sense—has a membership of 83 in good standing.

The following officers were elected to serve for the year 1922: President, Dr. Elmer E. Pownall, Richboro; vice-presidents, Dr. Roscoe C. Magill, Newhope, and Dr. John A. Weierbach, Qakertown; secretary-treasurer (reëlected for the twenty-seventh consecutive year), Dr. Anthony F. Myers, Blooming Glen.

Dr. Frank Lehman, in his retiring president's address, splendidly portrayed the value of intimate professional relations between the members of the society for the mutual benefit of humanity as well as the advancement of scientific knowledge among physicians.

The annual address before the society was delivered by Dr. J. Madison Taylor, Philadelphia, on "The Contribution of the Science of Medicine to Human Welfare and How that Contribution can be Enhanced." Dr. Taylor was in his element and for a season held his fellow practitioners, as it were, spell-bound with his intimate knowledge of the subject. Dr. Taylor may well be regarded a splendid successor to the fame of the late Dr. S. Weir Mitchell, with whom he was intimately associated for many years and whose memory every doctor loves.

Anthony F. Myers, Reporter.

CHESTER—OCTOBER

A most enjoyable and interesting meeting of the Chester County Medical Society was held at the Phœnixville Hospital on Tuesday, October 18th, with Dr. Willis N. Smith, President, in the chair. Following a very generous luncheon served by the Staff of the Hospital the Society was addressed by Dr. George Morris Piersol of Philadelphia, on Vascular Changes in Middle Life.

Dr. Piersol gave a complete summary of the recent research on the subject of vascular changes, then gave a more detailed outline of the pathology of arteriosclerosis and atheroma; the mechanics of high blood pressure, etc., illustrating his talk with drawings. In dealing with the subject of high blood pressure, Dr. Piersol emphasized the importance of examination of patients at frequent intervals, and insisting upon a very careful routine of living. The relation of the endocrine glands as a causative factor in high blood pressure is more clearly demonstrated in women than in men, for there are frequent cases of hypertension in women at the time of the climacteric. The influence of alcohol on vascular changes is still a mooted point, and the feeling of recent observers is that it plays a less important part than was at first believed. In the handling of cases of vascular disease the greatest difficulty is in persuading the individual that he is really sick when he feels perfectly well. Such cases refuse to change their habits of life until some calamity such as a stroke of apoplexy brings them to the realization of their condition. The most striking examples of refractory patients are met with among members of the medical profession.

In the diagnosis of arterial disease the greatest light is often shed by the ophthalmologist. A great many of the cases studied by Dr. Piersol at the large hospitals had been referred to the internists from the eye services, the only reason for the patients having consulted physicians being the fact that their vision had become impaired.

Dr. Piersol's paper was discussed by Drs. Sharpless, Pennell, Rothroc, Mellor, Aiken and others, and a vote of thanks was extended to Dr. Piersol for his kindness in addressing the Society.

Dr. H. Y. Pennell presented the following memorial of the late member, Dr. Robert B. Carey, of Glen Loch, which was accepted and ordered to be published in *The Medical Reporter:*

"On September 2, 1921, death removed our honored member, Dr. Robert B. Carey, of Glen Loch. Born in Brandywine Hundred, Delaware, on the 17th day of May, 1843, his father dying when Dr. Carey was twelve years of age and he being the eldest son, much of the support of the family early devolved upon him.

"For several years in early life he taught school, and prepared himself for the study of medicine, which he began at Ann Arbor, where he was graduated in 1871, receiving a second degree from Long Island College one year later. He first located in Charlestown Township, where he practiced two years, and removed to Glen Loch in 1874, where he remained until his death, owning and managing a farm as well as pursuing actively the practice of medicine.

"He married Mary E. Henderson, who died in 1916, after being an invalid for many years. Five children were born to them, of whom four survive. He was elected President of the Chester County Medical Society January 12, 1904, was a member of the staff of the Chester County Hospital from 1898 to 1900, was a Past Master of Thomson Lodge, No. 340, F. and A. M. He was a member of Malvern Baptist church and ordained a deacon on April 17, 1902. He was one of the four physicians to whom this society gave a testimonial dinner last year in honor of their having completed fifty years in the practice of medicine.

"In reviewing the life of Dr. Carey as we knew him we are impressed with many beautiful attributes of his character. Quiet and unassuming in manner, he possessed a kindness and warmth of heart that were remarkable, a devotion to his patients that was more than dutiful, and that endeared him to them, so that it can be truly said they all loved him. He was a doctor of the old type, now so rare, who counted no sacrifice, was deterred by no obstacles, whose charity never failed, who literally deemed faithful service its own reward, and humbly lived for the good of his fellow men. In the wide, rural territory which was the field of his labors, you will find no poor family that suffered because he refused to give them the best he had. Early and late, in heat and cold, no road was too long or too bad, no night too stormy, no weariness of his own too great for him to respond to the call of the needy and suffering.

"So long a life, so well spent, leaves a memory and a monument revered by all who knew him. May we not hope that his example will inspire many of us who are left to a more faithful and unmercenary devotion to those high ideals which he held as becoming those who follow our profession?

"C. S. Kurtz,
"Edward Kerr,
"H. Y. Pennell."

After a vote of thanks to the Phœnixville members, and the Staff of the Phœnixville Hospital the meeting adjourned. Henry Pleasants, Jr., Reporter.

ELK—OCTOBER-NOVEMBER

The regular October meeting of the Elk County Society was held at Emporium on October 13th. Dr. R. P. Heilman read a paper on dyspepsia, dealing more particularly with that type of digestive disturbance found in dilatation of the stomach and colon, reporting satisfactory results with colonic flushing, electricity and massage.

Dr. Mansuy, of Sinnemahoning, read his protest against certain uses and abuses that had crept into the practice of medicine. Among others, he spoke of the colon tube, only to condemn it in no uncertain terms. Alcohol in pneumonia was next given a black eye, while meddlesome interference in acute gonorrhea, ill-advised and prolonged use of injections, were next brought on the carpet. Dr. Mansuy then made a plea for the more intelligent and extended use of God's greatest gift to man—good, pure water. Dr. Bush reported a very interesting case for discussion, and many good things were brought out at the meeting.

The Society met at Wilcox for the November meeting, which was held on the 10th, with ten present. After a nice chicken dinner and the routine business, Dr. M. T. Leary read a paper on lobar pneumonia. As Dr. Leary expected, there was a lively and interesting discussion. Favorite prescriptions that had brought "Tommy So and So" through the crisis on such and such a day, etc., were advanced. Vaccines and serums had their advocates and the quinine and whiskey group were there also. It was finally decided to treat the fellow who had the pneumonia, and expect the average death rate.

On motion of Dr. Warnick, it was decided that Elk County Society would have nothing to do with the prescribing of beer under the present conditions as laid down by regulations of the Secretary of the Treasury, Mr. Mellon.

FRANKLIN—OCTOBER

The meeting of the Society for October was convened in the Arbitration Room of the Courthouse, on the third Tuesday of the month. Dr. LeRoy H. Saxe was selected as president pro tem. The following members were present: Drs. Amberson, Coffman, Croft, Kempter, Myers, Ryder, Saxe, Seaton, Seibert, Thrush, Shull, White, and Dr. Alex. Stewart, of Shippensburg.

Dr. J. Elmond Kempter, Chambersburg, read and discussed "Economical Aspects of Medicine." In the speaker's analysis, he found a larger population, comparing 1905 with 1921, with a lesser number of physicians, taking the United States as the field. Taking our home county in the time from 1905 to 1921 there is an increase of 7,373 in population, but eleven physicians less. Eight country practices were vacated. It is his belief that in 1905 there were too many doctors in the United States and too many in Franklin County. With better transportation and better roads, it is more favorable to the doctor in better returns, and to the patient in better service.

We have many enemies at our door, among which is the menace of compulsory health insurance, as well as the nonmedical and pseudomedical-healing cults. If we go to sleep we will have an awful awakening. One of the best suggestions of our local medical society was the meeting of allied professions of pharmacy and dentists, who understand our efforts to fight all hostile legislation aimed at us collectively. Since we have a representative watching all health legislation at Harrisburg, let us wake up our moribund committees on public health policies and educate our prospective legislators, who expect to go to Harrisburg. Dr. Kempter discussed the evils of the new cults in their relation to the profession and their dangers to the public. He also spoke of justice regarding pay for medical service. This paper was discussed by a number of those present. Dr. Croft moved that this paper be revised and given to the papers of Chambersburg and Waynesboro. John J. Coffman, Reporter.

FRANKLIN—NOVEMBER

The monthly meeting was held in the reception room of the Chambersburg Hospital, Tuesday, November 15, 1921. In the absence of the president, the secretary called the meeting to order. No vice-president being present, nominations for chairman were called for. Dr. Samuel D. Shull, Chambersburg, was chosen and presided during the meeting.

The meeting was well attended and guests were present from Hagerstown, Md.; Loomis, N. Y., and Cumberland County, Pa. Dr. R. B. Norment, of Hagerstown, addressed the meeting by invitation, taking as his subject "Diphtheria Prevention." He said in part:

Antitoxin is supposed to be a cure and yet there are many diphtheria carriers. It is not possible by methods in use at present to eliminate diphtheria. There has been an increase in the past ten years. Pennsylvania, however, has shown an improved condition. It would be possible to control the carriers if we could control all of the cases. Carriers may be intermittent. Diphtheria spreads more rapidly in the country than in the cities. Country people seem to be more susceptible. In order to eliminate the disease it has been proposed to locate susceptibles by means of the Schick test, immunizing by means of the toxin-antitoxin treatment. It is only a question of inducing the majority to submit. The test should be used for all children from six months to five years of age. Children under six months are largely immune to diphtheria.

Dr. W. D. Campbell, Hagerstown, in opening the discussion, said that one fault to be avoided is the use of too small a dose of toxin-antitoxin. Large doses do no harm. The subject was well discussed by those present. Dr. Saxe expressed the opinion that, through experience, where fumigation has been done, better results have followed than where it has been omitted.

Dr. J. Burns Amberson, Jr., Loomis, N. Y., by invitation discussed the subject "The Management of Tuberculosis." In opening, Dr. Amberson spoke of the injustice done Franklin County because all deaths occurring at Mont Alto Sanatorium are included in the statistics of death by tuberculosis within the county. He stated that all adults at some time have tuberculous infection. Free rales at the end of a cough are a strong diagnostic indication of pulmonary tuberculosis. The x-ray is a most important aid in the diagnosis of the disease. X-ray, combined with physical indications of the disease, make the diagnosis almost positive. In the treatment of this disease one of the most important things is rest, and when there is fever this rest should be taken in bed. Dr. Amberson discussed the subject in a lucid, practical and interesting manner, giving the information in a way that could be easily understood and adopted. The members joined in an interesting discussion of the subject.

John J. Coffman, Reporter.

MONTOUR—SEPTEMBER-OCTOBER

The regular monthly meeting of the Society was held at the farm of Dr. A. B. Vastine (dentist), above

Boyd's Station, opposite Danville, September 16, 1921, at 6:30 p.m., with sixteen members and visitors present.

The meeting took the form of an outing, and included a sumptuous dinner, with Dr. Vastine as host. After the festivities, a business session was held, at which a number of items of business of interest to the society were transacted. After this was concluded, a hearty vote of thanks was extended to Dr. Vastine and his family for the evening's entertainment, whereupon, on motion, the society adjourned.

OCTOBER MEETING

Manic Depressive Insanity. The regular monthly meeting of the society was held at the State Hospital for the Insane, Danville, October 28th, at 2 p.m., with the president, Dr. R. A. Keilty, presiding. The scientific program was furnished by the staff of the State Hospital, and consisted of a symposium on Manic Depressive Insanity, with case presentation; it being the third in a series of symposia on mental diseases, given by the staff of the hospital during the present year, for the benefit of the members of the society and neighboring physicians. Physicians were present from Shamokin Dam, Sunbury, Elysburg, Shamokin, Mt. Carmel, Bloomsburg and Danville.

Dr. Ida M. Ashenhurst presented a paper on the Etiology and Symtomatology of the disease. Generally speaking it was said to be characterized by recurring cycles of mania and melancholic outbreaks. The older psychiatrists regarded these as separate conditions; and it remained for Kræpelin to define and declare them to be but different manifestations of one and the same mental disorder.

It was shown that mania and melancholia did not occur as isolated attacks, but that during part of their course, each exhibited symptoms of the other. In this disorder, an outbreak of mania is usually proceeded by a period of depression, lasting from a few days to a month or more; or again, the prodromal symptoms of a period of depression may be those of mania; hence the conclusion that mania and depression are but phases of the same disease process.

Each phase is characterized by three cardinal symptoms. In mania we have, (1) psychomotor activity, (2) flight of ideas, and (3) emotional excitement. In the depressed phase we have (1) psychomotor retardation, (2) difficulty in thinking, and (3) emotional depression. In all cases of mania or depression these symptoms are present to a greater or less degree; and combined with them may be hallucinations, delusions, and other mental symptoms.

Different writers recognize different forms of manic depressive psychosis, depending upon the prominence of either phase, combined with the varied symptoms peculiar to both. The classification accepted to-day is that recommended by the National Committee for Mental Hygiene, which distinguishes, (1) the manic type, (2) the depressive type, (3) stupor, (4) the mixed type, and (5) the circular type.

Etiology. Heredity plays an important rôle in the etiology of this disorder. It appears that 80% present a history of insanity in the ancestry. While it usually appears in the third decade of life, cases are not infrequent before or after that period. It is more common in women than in men, the proportion being two to one.

In the years preceding the onset of the psychosis many patients have shown peculiarities; some have appeared abnormally bright, others have been considered eccentric, or possibly over-religious.

The exciting causes are of doubtful significance. Mercier tells us, "For every person, as for every beam and rope, there is a breaking strain; load a beam or a rope with sufficient weight, and whatever its strength, it will break at last. Subject persons to sufficient stress, and however well they may be constituted, they will become insane." Individuals with an unstable nervous organization are not strong enough to withstand the ordinary stresses of life, and in them a profound emotional disturbance may precipitate an attack of insanity.

Manic Phase. As already stated, the cardinal symptoms of the manic phase are psychomotor agitation, flight of ideas, and an elated mood. Preceding the outbreak is usually a period of depression of varying length, when the patient is lanquid, sleepless, uneasy and unhappy, with loss of appetite, constipation and general loss of weight.

Gradually the depression gives way to a feeling of well-being; there is a renewal of interest in life. The patient becomes cheerful, talkative, and elated. He considers himself efficient, is optimistic and joyous; his world is one of sunshine and roses.

Acute Mania. This is a typical form. Here we have the classic picture of a "hyperexcited" intelligence, and an urgent desire for movement. Flight of ideas is marked. In the normal process of thinking there is a guiding idea, a definite goal toward which the thoughts are directed; not so in mania. Here the ideas arise en masse, continue to accumulate, crowd, confuse and override each other without connection. Consciousness is more or less clouded, and there is some disorientation, especially for time and persons. This is largely due to the disorder of attention. Psychomotor activity is constant. It is in the field of conduct that the manic case shows the greatest disorder. He roams about, picks up every movable object and throws it down again. He sets his bed on end, tears up the mattress, sheets and pillow cases, and frequently decorates himself with the fragments. He breaks the window panes, kicks in the door panels, and assaults those who attempt to restrain him. He sings, swears and talks obscenely. Emotionally, these cases are happy and elated, although they are apt to be irritable; the slightest restraint or contradiction leads to outbursts of anger, and torrents of profanity and obscenity. The third grade of maniacal excitement is delirious mania, the most extreme of the maniacal state. This the "Brain Fever" of the older psychiatrists. There is complete clouding of consciousness, intense pyschomotor activity, much incoherence of speech, many hallucinations and dream-like delusions, and some elevation of temperature. The duration is usually short and the end, fatal.

The depressive phase of manic depressive insanity, as already stated, also manifests itself by three cardinal symptoms, (a) difficulty in thinking, (b) psychomotor retardation, and (c) emotional depression. The depression varies from a slight departure from the normal to profound misery and despair. The principal symptom is inability to think. The train of thought is retarded, and the control of the store of ideas incomplete. They not only think slowly but talk slowly and in scarcely audible tones. Their movements are slow, their walk aimless and dragging. They are incapable of occupation, and if given a task, are unable to keep at it. They are sad and depressed, but the emotion is mild. These cases have a good grasp of their surroundings and some insight into their mental condition.

The next grade is *acute depression,* in which the characteristic symptoms are more pronounced, and we have hallucinations, and delusions of a painful type, with hypochondriacal ideas. The appearance of the patient is expressive of woe; his face depicts misery, and his attitude is one of dejection and despair. His head droops, eyes are downcast, and his arms hang listless by his sides. He complains that he is the most wicked of men; that he has committed the unpardonable sin; that he has sinned against the Holy Ghost, and is condemned to everlasting punishment.

The third and most marked degree of depression is depressive stupor. Here we have inhibition, both physical and mental. At first listless and mute, the retardation deepens until the patient remains for days in an absolutely inactive state. Every need must be administered to; he has to be fed, usually with a tube. He seems to feel neither heat nor cold, hunger nor thirst, pain nor fatigue.

Circulatory insanity consists of cycles of mania and depression without lucid intervals. It is the perfect type to which the term Manic Depressive Insanity may be given without question. The change from one phase to the other may be gradual, or so rapid that within an hour or two the patient has passed from a state of excitement to one of depression.

Course and Prognosis. The course of manic depressive insanity is marked by a recurrence of attacks, separated by lucid intervals. The attacks, as the years go on, tend to become more frequent and of longer duration, while the lucid intervals grow correspondingly shorter. During the period of lucidity the patient returns to his normal mental condition; that is, to that state of mental health that may be considered normal for that particular individual. In this pyschosis there is no intellectual enfeeblement. The prognosis, for a single attack, is favorable; recovery being the rule. Recurrences, however, follow throughout the life of the patient.

Following the reading of the paper, Dr. J. Allen Jackson presented thirteen cases, which clearly and in a most helpful manner illustrated the various types and phases of this psychosis as outlined in the paper.

Case 1 was a manic, who talked rapidly, with a flight of ideas, jumping from one subject to another, and was emotionally excited.

Case 2 was of the "hypo-manic" type. He said, "I feel fine; I would like to go out on a farm." He thought his father was a millionaire; also that he was a great educator; named over many of the more familiar schools and colleges; talked in a rambling manner, jumping from one subject to another. When asked what he had been doing since coming to the institution, he said he built roads, that he was busy, was a good worker and no slacker.

Case 3 was an acute manic, who turned a somersault as he came into the hall. He appeared wild and excited; would strike; an attendant quietly removed a chair out of his reach, fearing he might act on an impulse to pick it up and strike someone with it.

Case 4 was also an acute manic, a lady, some talker, who was sarcastic and noisy, irritable and resentful.

Case 5 was a manic with delusions, a lady, who thought she was shot in 1865 and was still suffering from the effects. She had expansive ideas, thought she was quite a musician. She had depressed ideas, thinking she was persecuted.

Case 6 was of the *confusional type.* She required careful and much attention; was excitable, had rapid flow of ideas, and was restless; had an offensive breath and there was doubtless some toxemia as a basic factor.

Case 7 was of the *depressed type,* whose movements were slow, thought was slow. She said she felt fairly well. She replied slowly to questions. This represents a case of simple retardation.

Case 8 was one of acute depression. The emotions were depressed; thought and spoke slowly and said but little; might not speak for weeks at a time.

Case 9 was one of painful delusions. She moaned, "My God, what will become of me?" Her mind did not concentrate; thought they had pounded her.

Case 10 was one of depression with stupor. She talked but little; she thought she was sick; too sick to talk.

Case 11 was one of the *mixed form.* She was alternately excited and depressed; she was afraid those present would shoot her.

Cash 12 was of the circular type. He wanted to feel everything with his fingers. Thought he had been in the institution since the Johnstown flood. Physically and mentally he was up and down; at times he declared he was feeling fine and was buoyant and happy; at others he was dejected and depressed.

Case 13, and the last one, was of the *double form.* He said he was heavy in his legs; that he had dumb ague which came from a rush of blood to his head. He had a good insight into his condition.

Dr. E. B. Shellenberger, in opening the discussion, said he felt that he could add little to that which had been so ably brought out in the paper and emphasized by the presentation of cases. He, however, gave helpful suggestions for treatment in such cases, and showed how rest in bed, feeding, and the encouragement of good elimination, contributed to their comfort and aided in their recovery.

Dr. R. A. Keilty gave points in the pathology of this form of psychosis. He said that autopsy shows little in such cases. In syphilis we have reactions, due to the spirochæta, but here there is nothing of the kind. He emphasized two points: first a hereditary deficiency. There are found brain cells half developed and therefore having a diminished or only partial function, and this deficiency is passed on from generation to generation. Second, there is the toxic factor, and in the studies of the past, this has not been well brought out, but it counts in mental diseases. Much is due to defective elimination; some times long continued, thus giving low grades of toxemia.

Dr. H. V. Pike spoke regarding the differential diagnosis of the disorder under consideration. He stressed the fact that 80% of these cases have a definite hereditary factor. He said it could be termed functional insanity, and tends to recover and recur. Compared with dementia præcox, which usually belongs to an earlier period of life, there is little of the emotional here; there are few delusions or hallucinations, and the reflexes are not disturbed.

Dr. J. A. Jackson, in closing, said the cases presented had been true to the textbooks, and were helpful in the study of this psychosis; that he was glad to hold such clinics and would continue to hold them, and thus give opportunity to the surrounding physicians to become more familiar with mental diseases. He pointed out that some of these depressed cases could be successfully treated at home; that they should be put to bed, fed well, and the functions kept active, thus giving good elimination.

By unanimous vote the thanks of the society was extended to the staff of the hospital for the excellent program presented.

Dr. J. Allen Jackson, of the State Hospital, was received into the membership of the society by transfer from the Philadelphia County Society. After the transaction of several items of routine business, society adjourned. J. H. Sandel, Reporter.

NORTHAMPTON—NOVEMBER

The Medical Society of Northampton County held its regular monthly meeting on November 18th, at Seip's Café, in Easton, with at least two-thirds of the entire membership of the county present.

Mr. G. A. Boger gave an interesting talk as to what the city of Bethlehem was doing in order to secure a better milk supply. This brought forth a spirited discussion which resulted in a motion that the president should appoint a committee of five members to assist in the establishment of a number of certified dairies throughout the county.

The advisability of issuing a bulletin for our society was referred to the executive committee to be reported on at our next meeting.

Resolutions of respect on the death of Dr. H. J. Laciar, of Bethlehem, were presented and accepted and a copy ordered sent to the family and The Pennsylvania Medical Journal.

Dr. Collier F. Martin, of Philadelphia, read a paper on "The Clinical Significance of Perirectal Infection," and Dr. Harry Ungerleider, of the same city, read a paper on "A Consideration of Hemorrhoidal Disease." Both of these papers were illustrated with lantern slides and proved very interesting and instructive.

Luncheon was served at the expense of the society and the meeting adjourned after a long and interesting session.

The next regular meeting will be held on the third Friday of December at a place to be decided by the executive committee.

W. Gilbert Tillman, Reporter.

SOMERSET—NOVEMBER

The Somerset County Medical Society convened in the last session for the year 1921, on November 15th, in the Courthouse at Somerset. This was the annual business meeting and all business for the year was recounted and commented on.

Reports of all the officers were presented and accepted. The secretary's report showed only a reasonable average attendance of members during the year, although we had several very good sessions. The treasurer's report showed a healthy condition of the treasury. We lost one member by death, Dr. A. M. Lichty, of Elk Lick, during the year, two by removal and one by request. We gained one by reapplication and two by original application, thus holding our own in membership. So far as I can ascertain only two physicians in the county who are eligible to membership are not in a county society; several are members of other county societies. We hope to have all eligible members in the society during the next year.

Dr. J. T. Jacobs, of Somerfield, has been seriously ill of typhoid fever, but late reports say that he is getting better. The doctor never joined the Society. He is now well on towards eighty years of age.

The Society saw fit to reëlect the present secretary, now his thirty-third consecutive election. Dr. J. T. Bowman is president, Dr. W. P. Shaw is vice-president and Dr. C. W. France is treasurer for 1922.

H. C. McKinley, Secretary.

SUSQUEHANNA—OCTOBER

The Susquehanna County Medical Society held its October meeting in the Public Library at Montrose, on the 11th. The meeting was called to order and the regular business program carried out.

The Society was honored by the presence of Dr. C. H. Keene, of the Public Health Department of Harrisburg, who read a very instructive paper which emphasized the care the medical inspector of schools and the family physician should give to school children in the very beginning. He pointed out that the fresh-air children gave a higher percentage in mental development as well as physical improvement. A vote of thanks was extended to Doctor Keene for his most interesting paper and the meeting adjourned.

H. D. Washburn, Reporter.

UNION—OCTOBER

A dinner and special meeting of the Union County Medical Society were held at Stenningers, in Lewisburg, Thursday evening, October 23d. Those present were the district censor, Dr. Brenholtz, with Drs. Rewalt and DeLaney, from Williamsport, and the following Union County members: Drs. Thornton, Leiser, Steans, Dimm, Hill, Bickel, Gundy, Gearhart, Persing and Glover.

Dr. Brenholtz spoke on the medical legislation of the last session, and of matters that are likely to come up again. Dr. Rewalt gave a timely and interesting talk on the pneumonias of childhood, and Drs. DeLaney and Dimm entertained us with matter of interest relative to the general good of the profession.

The sudden death of Dr. T. C. Thornton, the nestor of the Union County Medical Society, occurred the following day, while making a call. Dr. Thornton will be greatly missed.

Oliver W. H. Glover, Reporter.

WARREN—AUGUST-SEPTEMBER-OCTOBER

The August meeting of the Society was in the nature of a picnic and was held at the country home of Dr. Richard B. Stewart, the wives of the members participating. The dinner, in the open, beside the Conewago Creek, was the chief feature.

The September meeting was held in the borough of Tidioute, Dr. Brewster acting as host. The few members who made the long journey were served in the local hotel with a fine repast. Dr. Brewster opened a discussion on the treatment of cholera infantum, which was participated in generally. The disease is rather infrequent in Warren County and very few deaths occur. The most important point in the treatment is to cut all food to the minimum, giving only water or egg albumen.

The October meeting was postponed to the 24th, and was held at the State Hospital, Dr. Mitchell and staff acting as hosts. Dr. Elmer Hess of Erie, gave a very practical talk on "Renal Tuberculosis." He explained the symptoms, and the indications for surgical treatment and for nonintervention were gone into. No doubt many cases of so-called chronic cystitis are tubercular in nature and could be helped by recognition of this fact. Dr. Hess is an able speaker and we hope to hear him again. Dr. Ellsworth of our society, gave a detailed account of a case of bichloride of mercury poisoning, in which the treatment recommended by Wilms, calcium sulfid intravenously, was carried out with success. Dr. McAdoo, also of the hospital staff, made a report of a case of pernicious anemia. The family history carefully studied showed that this disease was present in several members of the family for three generations back.

On complaint of several members against the action of the Warren Board of Health in making a diagnosis of scarlet fever without giving the physician in attendance a chance to be present, a committee was appointed to confer with the Board of Health.

The meeting was well attended, and an excellent supper was served by the hospital staff.

M. V. Ball, Rporter.

WASHINGTON—NOVEMBER

At a meeting of the Washington County Medical Society held November 9, 1921, at Washington, Pa., the following resolution was unanimously adopted:

"Whereas, We, the Washington Medical Society of the State of Pennsylvania do not believe that beer is necessary as a medicine, and the organized liquor traffic of our country has ever been and is now willing to sacrifice any individual organization to gain its own selfish ends, and further that they are trying to make null and void the judgment and vote of forty-five out of the forty-eight states and that they are trying to accomplish this by dragging our profession into it; therefore, be it

"Resolved, first, that we most vehemently protest against such action by the organized liquor traffic; second, that copies of this resolution be sent to the United States Senate and to the House of Representatives, immediately; third, that this resolution be published in the daily papers, in The Pennsylvania Medical Journal and the Journal of the American Medical Association."

Attest: C. Cracraft, Secretary-Treasurer.

IN MEMORIAM

DR. HENRY J. LACIAR

AUGUST 10, 1857-JUNE 13, 1921

Dr. Laciar was born in Bethlehem, August 10, 1857. He spent practically the whole of his useful life in the town, later the city, of his birth. He died June 13, 1921, aged 63 years.

His preliminary education was obtained in the public schools of the town. He passed through all the grades and graduated from the High School with honor. He studied at Lehigh University for a period, then studied pharmacy and served as a practicing pharmacist in Philadelphia for a time.

He received a scholarship and entered the College of Physicians and Surgeons in Baltimore. He graduated in due course, obtaining the second honor in his class. He served one year as resident physician of the Baltimore City Hospital.

In 1883 Dr. Laciar returned to Bethlehem and began the practice of his profession. He pursued his vocation with such ardor and ability that he soon attained prominence amongst his professional brethren, and the love and respect of a large clientele of patients.

Dr. Laciar was not content with the discharge of his professional duties alone, though these were performed with notable zeal and success; he also took the keenest interest in the civic and political affairs of the community. He served as president of the Board of Health of the former borough of Bethlehem. He was the founder, and the first president of the Lincoln Republican Club. He was an honored member of fraternal organizations, and a devout and influential member of Grace Lutheran Church.

Very soon after beginning practice, Dr. Laciar was admitted to membership in the Northampton County Medical Society, and the Medical Society of the State of Pennsylvania. He was active in the affairs of the county medical society especially. Well prepared, and soon well experienced in medicine, he was ready in discussion and able in counsel to his confreres.

St. Luke's Hospital, recognizing his ability, made him consulting physician on its staff, and he was a trusted counselor and friend of the institution until his illness prevented his further activities.

Dr. Laciar led an active, useful life. He was an honor to the profession, a pillar of strength in support of civic and fracternal affairs, and a beloved physician. His confreres in the Northampton County Medical Society who knew him well, would like to present a more adequate tribute to his worth and efficiency. They deplore his so early call to the beyond. They offer the tribute of their love and respect to the memory of this beloved husband and father, this useful citizen and trusted physician.

Signed:
E. D. Schnabel,
W. L. Estes,
R. J. Yost,
Committee.
Northampton County Medical Society.

STATE NEWS ITEMS

DEATHS

Dr. William M. Alrich, of Philadelphia, died October 27, 1921. He was a graduate of the University of Pennsylvania School of Medicine, 1889.

Dr. Neafie Richardson, of Philadelphia, died October 30, 1921. He was born in 1872 and graduated from Medico-Chirurgical College of Philadelphia in 1906.

Dr. Franklin Mathews, of Philadelphia, died October 29, 1921. He was born in 1848 and graduated from Jefferson Medical College of Philadelphia, in 1872.

Dr. Philip Rankin Koons, of Mechanicsburg, died very suddenly at his home on October 30, 1921, aged 73 years. He was graduated from Jefferson Medical College in 1879.

Dr. Charles T. King, Medico Chi College, 1906, a Lieutenant Colonel in the U. S. Army, a native of Wellsboro, Pa., died of nephritis, in San Francisco, on September 7th.

It is with regret that we announce the death of Mrs. E. B. Ilyus, the wife of Dr. E. B. Ilyus, of Lancaster, who died recently in a Philadelphia hospital, following a stroke sustained some months ago.

Dr. Eben J. Russ, of St. Marys, died November 13, 1921, aged 81 years. Dr. Russ graduated from George Washington University Medical School, Washington, D. C., in 1861, and although he retired from active practice some years ago, still retained his membership and interest in the Elk County Society.

Dr. John J. Newpher, 65 years old, a physician of Mount Joy for the past 35 years, died November 8, 1921. Dr. Newpher was born in 1854 and graduated from Bellevue Hospital Medical College, N. Y., in 1881, having a very extensive practice in his section of the state. He is survived by his widow and one daughter, Mary Newpher. His only son, Lieutenant James J. Newpher, was killed during the Argonne drive.

Dr. Thomas C. Thornton, of Lewisburg, died at his home on October 21st, aged 82 years. Dr. Thornton was born on March 24, 1839. In 1862 he graduated in medicine at the University of Vermont, Burlington, and spent his first three years as an army surgeon in the Civil War. After the war he returned to Lewisburg and practiced medicine up to the hour of his death. He was for many years an active member of the Lycoming County Medical Society, later becoming an active member of the Union County Medical Society. He was also Health Officer and secretary of the Board of Health in Lewisburg for many years. Dr. Thornton leaves to survive him, a wife and two children.

Dr. Henry Clay Chisolm, of Huntingdon, 62 years old, and for thirty years a well-known physician of that city and central Pennsylvania, died October 25th, at Niagara Falls, where he had gone to recuperate from a general breakdown due to overwork. He was born in 1859, and after graduating from Hahnemann Medical College and Hospital of Philadelphia, in 1888, he settled in Mississippi, but was compelled to leave that state after the Ku Klux Klan had murdered his father, Judge Chisolm, his brother and sister. He represented the Franklin-Huntingdon district in the Senate from 1897 to 1900 and was a member of that body at the time of the famous fight against United States Senator Quay. He is survived by a widow and two daughters.

BIRTHS

Born to Dr. and Mrs. J. M. Skirpan, of Monessen, a daughter, on October 14th.

On November 21st, at the Harrisburg Hospital, a daughter was born to Dr. and Mrs. George R. Moffit, of that city.

Dr. and Mrs. Harold Hirshland, of Reading, are receiving congratulations on the birth of a son, Julian, who arrived at the Reading Hospital on October 25th.

ITEMS

Read the article in the Executive Secretary's Department on "Locations for Physicians."

Dr. Percy D. Hoover, of Waynesboro, recently returned from a trip to California.

Dr. Harry A. Holland has moved from Sagamore, Pa., to Philadelphia.

Dr. A. C. Luhr, of St. Marys, has gone to Rochester, Minn., to take up postgraduate work.

Dr. and Mrs. Albert C. Althouse, of Dublin, recently spent some time at Niagara Falls.

Dr. W. T. Graham, of Sunbury, Pa., has recovered from a prolonged illness and is back at active work.

Dr. C. G. Wilson, of St. Marys, the oldest member of Elk County Society, has been quite ill at his home.

The recent popular drive for funds, conducted by the Harrisburg Hospital, netted over a million dollars in cash and pledges.

Dr. W. Edgar Holland, of Fayetteville, who has been confined to his bed for some weeks, is again able to attend to his practice.

Dr. Park P. Breneman, of Lancaster, recently attended a meeting of the American Roentgen Ray Society, in Washington, D. C.

Arrangements have been perfected whereby Pittsburgh physicians may be called at night from police stations or fire engine houses.

Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association, has returned from a special mission to China.

Dr. and Mrs. George G. Ross, of 1721 Spruce Street, Philadelphia, announce the engagement of their daughter, Frances J. Ross, to William E. M. Poole.

Dr. Thomas G. Aiken, of Berwyn, was recently elected physician-in-chief of the medical service in the Chester County Hospital, at West Chester.

Dr. J. Morton Boice, Secretary of the Philadelphia County Medical Society, is seriously ill in the Jefferson Hospital, Philadelphia, following an operation.

Dr. Frank White, retiring president, was tendered a reception and banquet at the Æsculapian Club at its Club House, Philadelphia, November 10th. One hundred and twenty-five guests were present.

At a recent meeting in Uniontown, the Fayette County Medical Society unanimously adopted a resolution disapproving of the use of beer and wine for medicinal purposes.

The headquarters of the General Alumni Society of the University of Pennsylvania have been changed to Room 1626, Real Estate Building, Broad and Chestnut Streets.

John A. Diehl, of Marion, has resigned as president of the Board of Directors of the Chambersburg Hospital. T. B. Kennedy, of Chambersburg, was elected president to serve the unexpired term.

Dr. John B. Deaver, of Philadelphia, was the principal speaker at the fiftieth anniversary celebration of the incorporation of the Presbyterian Hospital, held in Witherspoon Hall, Philadelphia, November 25.

Dr. A. L. Benson, of Ridgway, secretary for the past two years of Elk County Society, has moved to

Phillipsburg. His work will be taken care of the balance of the year by the reporter, Dr. Samuel G. Logan, Ridgway.

Dr. and Mrs. Joseph Price Tunis and family, of Philadelphia, after spending the summer at Journeys End, their cottage at Northeast Harbor, and the fall at their farm at Churchville, Pa., have returned home for the winter.

Dr. Charles J. Hatfield, of Philadelphia, was recently elected chairman of the Southeastern Pennsylvania Chapter of the American Red Cross at a meeting held in their headquarters, 219 South Nineteenth St., Philadelphia.

Dr. P. Harold Decker, of Williamsport, has discontinued the practice of general medicine, and has entered the University of Pennsylvania Postgraduate School for an eighteen months' course in diseases of the eye, ear, nose and throat.

Appropriate resolutions on the passing of Dr. M. Howard Fussel to the Great Beyond were drawn up by the Northwest Branch of the Philadelphia County Medical Society, signed by the officers, Dr. M. J. Karpeles, chairman; S. Q. West, secretary, and sent to members of his bereaved family.

A public health center has been opened in Sayre by the Athens-Sayre Tuberculosis Society and the Bradford County Red Cross Chapter. Miss Beach is in charge of the tuberculosis work and Miss Kathryn Edward directs the Red Cross activities. A baby clinic has been established in the center.

The twenty-sixth annual meeting and banquet of the Harrisburg Academy of Medicine was held at the Penn-Harris Hotel on the evening of November 15th. The speaker of the evening was the Hon. Jesse E. B. Cunningham, who delivered an excellent address on "The Trend of the Times."

The wedding of Miss Marion Taylor, daughter of Dr. and Mrs. William J. Taylor, of Philadelphia, took place October 22d, in the Church of the Saviour, Jenkintown. Owing to mourning in the family, the wedding was very quiet and only the immediate members of the family attended. Dr. and Mrs. Taylor and their family are occupying their country place, "Vernon," Jenkintown.

In the October term of court of Mercer County, Pennsylvania, one Bashline, an osteopath, was tried and convicted of practicing medicine without a license. This case was of great interest in the western part of the state and was contended by the defense with able legal talent, but the evidence was conclusive and conviction followed. Bashline has appealed the case to the Superior Court.

The first regular meeting of the Medical Alumni Association, University of Pittsburgh, was held at the Americus Club, September 26, 1921. The following officers were elected: President, Dr. R. J. Behan; Vice-President, Dr. Calvin C. Marshall; Secretary, Dr. H. J. Benz; and Treasurer, Dr. H. E. McGuire. After the election, moving pictures of obstetrical and gynecological interest were shown.

Dr. Walter H. Brown, a member of the Bucks County Medical Society, who spent the past year in France in connection with the Rockefeller Foundation, as Director in establishing Departments of Health in various cities in that country, has returned to the United States. He is temporarily located at Mansfield, Ohio, as Director of the National Child Health Demonstration for the state of Ohio.

The Pittsburgh College of Physicians gave a testimonial dinner to Dr. Beverly R. Tucker, of Richmond, Va., on October 13, 1921. About forty members were present, and after a delightful dinner, which was served at the University Club, the honor guest took up the consideration of chronic convulsions in his presentation "Newer Conceptions on Convulsions." In a very clear and concise manner the causes of chronic convulsions with especial reference to dispituitarism were discussed. Drs. E. Bosworth McCready, Geo. J. Wright, H. C. Henninger, and C. C. Wholey took up the discussion of the interesting problem.

On the morning of November 15th, Dr. F. W. Black, of Lewistown, acting chief of the staff of the Lewistown Hospital, was aroused by some one knocking at the door in the rear of his offices. Upon going down stairs, he was making his way along the hall when he saw a man huddled in the corner of the office. He turned to grasp the telephone to call for help when a bullet struck his back on the left side, passing through his body. Dr. Black did not recover consciousness until three hours later, when he summoned help. His condition is not considered serious. Detectives have advanced several theories as to the motive for the shooting, and the man will in all probability be apprehended.

A mock trial was held in City Hall, Philadelphia, on November 16th, under the auspices of the South Branch, County Medical Society. A very large audience was present and the meeting was very profitable. The purpose of this trial was to bring out the points of medicolegal value pertaining to the attitude and action of physicians while handling such cases, either in private practice or in hospitals. Emphasis was laid upon the need of keeping complete hospital records in such cases. Judge Patterson, in the summing up of the case, elucidated several points of very practical interest, especially showing that if a physician is subpœnaed to attend a legal court he is compelled to answer the summons, or, if delayed on an active case, to send word to the presiding official, then later to appear in person to make explanation. All judges appreciate the importance of the physician's time and endeavor so far as possible not to delay the physician when he is called. Prominent physicians, lawyers and business men were represented on the jury and in the audience. Many ladies were also present.

On October 29th, the thirty-first annual session of the New York and New England Association Railway Surgeons was held at the Hotel McAlpin, New York City. The symposium for the afternoon session was "Surgery of the Stomach and Intestines." On this attractive program were the names of surgeons standing at the very head of the medical profession of the entire world, viz: Dr. Charles H. Mayo, of Rochester, Minn.; Dr. John B. Deaver, of Philadelphia; Dr. Charles H. Peck, Dr. Lewis Gregory Cole, Dr. William Sharpe, Dr. William A. Downes, Dr. William B. Coley, of New York City; Dr. Donald Guthrie, of Sayre, and Dr. J. M. Wainwright, of Scranton. In closing the discussion of this symposium, Dr. John B. Deaver, of Philadelphia, gave a moving picture demonstration of the various operations upon the stomach and intestines.

The following officers were elected for the ensuing year: President, Dr. Donald Guthrie, Sayre; First Vice-President, Dr. J. K. Stockwell, Oswego, N. Y.; Second Vice-President, Dr. Edgar VanderVeer, Albany, N. Y.; Treasurer, Dr. J. M. Hamilton, Rutland, Vt.; Recording Secretary, Dr. Horace H. LeSeur, Batavia, N. Y.; Corresponding Secretary, Dr. George Chaffee, Binghamton, N. Y. Fifty surgeons were elected to active membership in the Association.

GENERAL NEWS ITEMS

Frank E. Brooke, of New York, was recently elected superintendent of the Harrisburg Hospital. He assumed his duties December 1st.

Among the officers elected at the recent session of the American College of Surgeons for the year 1922-23 were Dr. George P. Miller and Dr. George E. de Schweinitz, both of Philadelphia.

Sir Harold Stiles, Regius Professor, University of Edinburgh, has been visiting his fellow graduate, Dr. Tom A. Williams, in Washington. Sir Harold came to America to give the convocation address before the American College of Surgeons, and has visited several of the chief surgical clinics also.

At the recent session of the American College of Surgeons, two Philadelphians were among the eight American surgeons on whom honorary fellowships in the Royal College of Surgeons of Ireland were conferred by the regents of the Irish college, who came from Dublin to take part in the ceremonies. They were Dr. Richard H. Harte and Dr. W. W. Keen.

On November 15th Sir Andrew McPhail, of Montreal, was shot and wounded by Louis Ogulnik, who later committed suicide by shooting. The shooting followed an argument between Ogulnik and Sir Andrew. Sir Andrew is professor of the History of Medicine at McGill University, editor of the *University Magazine* and *Montreal Medical Journal.* He is the author of several medical works.

A $500,000 research academy as a monument to American surgery, a tribute to the late Dr. John T. Murphy, famous surgeon of Chicago, and to help humanity, will be built by the American College of Surgeons, in conjunction with the citizens of Chicago. The new memorial building will stand as a landmark of surgery, and will combine one of the greatest surgical museums with laboratories and a scientific library devoted especially to surgery.

Outstanding above the various events of importance in the field of anesthesia in the way of scientific discussion and problems for the advancement of the specialty at the Kansas City convention, October 24-28, was the decision on the part of the Board of Governors of the N. A. R. S. calling a world's convention of anesthetists to be held in conjunction with the next annual meeting. This, so far as records and recollections go, will be the first world's gathering of anesthetists ever held. Invitations to participate will go to the leading and representative anesthetists in London, Paris, Vienna, Buenos Aires, Sydney and other world centers of importance.

Dietitians Needed in U. S. Public Health Service.—Washington, D. C., November 26, 1921. The United States Civil Service Commission states that there is need for a considerable number of dietitians in the Public Health Service at hospitals throughout the United States, and that until further notice it will receive applications for such positions.

The basic entrance salary offered is $960 a year with possible promotion to the basic pay of $1,344 a year. To all salaries there is added the increase of $20 a month granted by congress. In addition, quarters and subsistence are furnished free by the government.

Applicants are not required to undergo a written examination, but are rated upon the subjects of general education, weighted at 30%, and technical training and experience, weighted at 70%.

Full information and application blanks may be obtained by communicating with the United States Civil Service Commission, Washington, D. C., or with the secretary of the local board of civil service examiners at the post office or custom house in any city.

Medical supplies contributed by the American Red Cross and distributed by the American Relief Administration are being shipped into Soviet Russia in increasingly large quantities. By the end of the year Red Cross supplies valued at more than $1,750,000 will have been placed at the disposal of the American Relief Administration for use in the disease-ravaged provinces. These supplies include drugs, hospital supplies and equipment and hospital clothing from Red Cross stocks in Europe and in the United States. Medical effort will be concentrated in the provinces of Kazan, Simbirsk, Samara, Saratov, and to a limited extent in Petrograd and Moscow.

Dr. Henry Beeuwkes, who is directing the distribution of the Red Cross medical supplies, says in a recent report to National Headquarters:

"The cholera epidemics have been relieved and the disease is now sporadic. Typhus fever is appearing and severe and extensive epidemics are expected this winter. Malaria has been severe and is still prevalent in chronic forms. Typhoid fever and scorbutus are very prevalent, as well as infectious exanthemata, and diseases of the skin and eyes. Constitutional diseases are severe and widespread. Drugs and hospital supplies are extremely scarce, and satisfactory medical and surgical work is in consequence impossible. A leading surgeon in Simbirsk told me that they draw thread from clothing to secure suture material. Hospitals are congested and have long waiting lists.

"Our present plans contemplate the supplying of existing hospitals and clinics with drugs and hospital supplies essential to their operation, the organization of clinics at food distributing centers in areas without medical facilities, and the inauguration of measures to prevent and combat diseases in areas in which we operate. In order to combat typhus we have in view the establishment of large numbers of bath and disinfecting units to be installed and controlled by American personnel and operated by the Russians. Installations will be simple and the cost low in comparison with the benefits they will render in areas badly infested and without bathing facilities."

BOOKS RECEIVED

A Treatise on Diseases of the Skin for Advanced Students and Practitioners, by Henry W. Stelwagon, M.D. Ninth Edition, revised with the assistance of Henry K. Gaskill, M.D., attending Dermatologist to the Philadelphia General Hospital. 1313 pages with 401 text illustrations and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10.00 net.

Surgical Anatomy (New Third Edition), by William Francis Campbell, M.D., Surgeon-in-Chief at Trinity Hospital, Brooklyn, N. Y.; sometime Professor of Anatomy and Professor of Surgery, Island College Hospital. 681 pages with 325 original illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $6.00 net.

History of Medicine, With Medical Chronology, Suggestions for Study and Bibliographic Data, by Fielding H. Garrison, M.D., Lt.-Colonel, Medical Corps, U. S. Army, Surgeon General's Office, Washington, D. C. Third Edition, Revised and Enlarged. Octavo of 942 pages with 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth. $9.00 net.

The Spleen and Some of Its Diseases, by Sir Berkeley Moynihan, of Leeds, England. 129 pages with 13 full-page diagrams. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $5.00 net.

BOOK REVIEW

GYNECOLOGY. By Brooke M. Anspach, M.D., Associate in Gynecology, University of Pennsylvania, with an introduction by John G. Clark. Cloth, 752 pages, 526 illustrations. Philadelphia and London: J. B. Lippincott Company, 1921. Price $9.00.

(Continued on page xiv)

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ADDRESS

PREVENTIVE PEDIATRICS*

HENRY JAMES CARTIN, M.D.
JOHNSTOWN

The present tendency of medicine is toward prevention. We all agree that the most important time to begin is with the baby, preferably during the prenatal period.

To quote Dr. Ferrand, "This was the fact that after the tuberculosis experts and the malaria experts and the venereal disease experts and the general public experts and the infant mortality experts had held their conferences and reached unanimity upon certain general principles and had begun to unite upon general recommendations to make, * * * they all agreed that the first and most important field to be attacked and the one which offered the greatest promise of immediately successful results was the field of the child and child welfare; that we could well afford to postpone, if necessary, action in other fields in order to attack promptly the great problems of infant mortality and to increase the welfare of childhood throughout the world."

Many states are well organized in child welfare work. Thirty-three states, the District of Columbia, England and Canada were represented at the annual meeting of the American Child Hygiene Association, held at St. Louis, in 1920. A conference was also held at Washington, D. C., September 29, 1921, to devise means for more effective coöperation between the several states and the Public Health Service.

Pennsylvania stands high in child welfare work; its Department of Health is receiving and appreciates the coöperation of physicians. The Department advocates "regular and expert examinations under standardized conditions, detecting threatening defects before they handicap and educating the parents as to what constitutes good health habits from the earliest weeks on." One thing, the meaning of which the Department is very anxious to have physicians and laity alike grasp, is that "with the baby as the starting point every sort of community health or welfare project must make its contribution—it makes no difference whether it is garbage disposal, clean milk, pure water or good roads, the baby's well-being is the best argument and the one that gets farthest with citizens of every social layer."

A phase of preventive medicine which merits our special attention and represents the most notable advance in recent years, in fact since vaccination was introduced, is the Schick test and the administration of toxin-antitoxin for the prevention of diphtheria. Diphtheria continues to engage our most serious consideration because, notwithstanding the use of antitoxin and other measures, the incidence and mortality have remained stationary. It is apparent that we have reached the limit of control of this disease by older methods. I would suggest that those yet uninformed on the technique of the Schick test and administration of toxin-antitoxin secure this information from the many instructive articles which have appeared in the recent medical journals, especially the articles of Park and Zingher.

I quote from a recent letter from Dr. Park in which he gives his ideas of the present status of diphtheria toxin-antitoxin and the Schick test, as the result of eight years' work in the schools and institutions of New York City:

"We have every reason to believe, from our observation in institutions, that immunity can be produced in practically every child. The immunized children who remain under observation are still immune at the end of six years. * * * We are advising more and more the injection of the toxin-antitoxin in children between six months and three years without the previous Schick test. * * * We consider a negative Schick test an evidence of immunity. * * * I am personally more convinced than ever that in toxin-antitoxin we have the means with which to eliminate diphtheria."

Such testimony from the man who has placed this immunity measure on a practical basis, should convince us of its value and induce us to take up the work.

I would urge on each of you as you return to your respective communities that you support in every way the child welfare work, and especially that you initiate a movement for the elimination of diphtheria.

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*The Chairman's address delivered before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

1. Personal communication of Dr. Mary R. Nohle, Division of Child Health, Harrisburg, Pa.
2. Park, W. H., Modern Methods for Prevention of Diphtheria, Archives of Pediatrics, Vol. xxxiv, No. 6 (June, 1921).
3 Zingher, Abraham, Diphtheria Prevention Work in the Public Schools of New York City, J. A. M. A., 77: 825 (Sept. 10, 1921).
4. Personal communication of Dr. Wm. H. Park, New York City.

ORIGINAL ARTICLES

Symposium: The Treatment of Syphilis

MODERN CONCEPTIONS OF THE TREATMENT OF SYPHILIS*

JAY FRANK SCHAMBERG, M.D.
PHILADELPHIA

In presenting the treatment of primary, secondary and tertiary (cutaneous) syphilis, the topic assigned to me in this symposium, I shall take the liberty of discussing principles first and methods later.

Syphilis is a disease which, under ordinary circumstances, is caused by inoculation of the skin or of a mucous membrane with the spirochæta pallida (treponema pallidum). The motile organisms begin to migrate beyond the seat of infection within a few hours after implantation has taken place. They are later carried through the lymph and blood streams and deposited in the various tissues and organs of the body. While syphilis is commonly referred to as a "blood disease," the spirochete excites relatively little disturbance in the blood and except during the secondary period, the affection is probably, from the standpoint of parasitic distribution, less a blood than a tissue disease. No organ or structure is immune against the penetration of the parasite, although some offer more favorable conditions for long continued residence than others. The symptoms of syphilis represent a defensive tissue reaction, which is primarily inflammatory in character but after a lapse of years may eventuate in fibrosis followed by atrophy or parenchymatous degeneration. The longer the disease lasts the more securely are the spirochetes intrenched and the more invulnerable are the tissue barriers erected.

Obviously the purpose of treatment is to exterminate every spirochete in the body. The most powerful chemical weapon which we possess is dioxydiaminoarsenobenzol dichlorhydrate (known as "606," salvarsan, arsphenamine, etc.) or one of its derivatives. The experience of the past decade has demonstrated this drug to be the premier medicament in the destruction of the parasite of syphilis. Mercury which was for several centuries recognized as the sheet anchor of treatment, must still be regarded as a remedy of value, but occupies a position of secondary importance. That arsphenamine is superior to mercury is a virtually established fact. Its superiority is based not alone on the magically rapid disappearance of syphilitic manifestations after its use, nor its success where mercury has failed, nor on the greater influence on the Wassermann reaction. Strongly supportive of the clinical evidence are laboratory studies on both animals and man.

The therapeutic value of a chemical compound in any infectious disease is related not only to its destructive influence on the parasite but likewise on its tolerance by the body cells. It might be a powerful and successful parasiticide in a given dose, but if this dose was fatal for the animal the drug would be virtually useless. A useful parasiticide must exhibit a considerable latitude of safety between its parasiticide, curative or therapeutic dose and its tolerated dose. And herein we note a striking difference between arsphenamine and mercury. Arsphenamine is tolerated by the white rat in about 100 mg. per kilo of body weight; mercury is tolerated by the same animal in about 2 mg. per kilo of body weight. Mercury is, therefore, 50 times more toxic than arsphenamine. Mercury, by reason of its much greater affinity for the body cells, can be administered only in small doses as compared with arsphenamine. Arsphenamine is presumed to have a much greater affinity for the spirochete than mercury but I am not convinced that this assumption is necessarily true. Were it possible to incorporate mercury into a well-balanced molecule which would be tolerated in a 100 mg. per kilo, it is quite possible that a spirocheticidal effect equal to that of arsphenamine might be achieved. But despite great industry in this direction, no signal advance has been made.[1]

Mercury in the highest dosage that can be tolerated by man in a single or several succeeding administrations, fails to effect a disappearance of spirochetes in external lesions. Scholtz and Kelch[2] studied in human subjects the effect of mercury (1/6 to ⅛ gr. of Hg. bichlorid) or (½ to 2/3 gr. calomel) injected twice daily on three successive days. At the end of this time spirochetes were still present in chancres and other lesions. On the other hand, 50 mg (0.05 gm.) of neoarsphenamine injected twice daily for two days, invariably led to complete disappearance of the spirochetes. A single dose of 200 mg. (0.2 gm.) of neoarsphenamine was superior in effect to the multiple injections of divided doses.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Some writers have assumed that mercury does not produce its effects in syphilis by a direct influence upon the spirochetes but in some mysterious indirect manner. Indeed, the statement has been made that one of the valuable features of mercurial treatment, as contradistinguished from arsphenamin treatment, is its stimulation of antibody production. The investigations of Toyama and Kolmer[3] do not bear out this distinction. They showed that whilst massive doses of arsphenamin and mercuric chlorid tended to suppress antibody production and cause a decrease in hemolytic complement, smaller doses tended to increase the production of antibodies (agglutinins) and augment the complement content after a primary decrease. It would thus appear that the drugs act in a similar manner with respect to antibody production. They probably both act likewise as direct spirocheticides, although mercury is much the weaker.

Von Ehlers (13th Int. Med. Congress, 1913) was able to produce astoundingly rapid disappearance of the chancre and other syphilitic lesions by the injection of increasing doses of benzoate of mercury up to four grains (0.25 gm.). Abortive cures were likewise produced. Stomatitis, dermatitis and colitis occurred in some cases, however, with a fatality from the last named complication.

From the clinical standpoint the arsphenamins, unless used too intensively, have a roborant and tonic effect upon the general health, improving color, weight and the general sense of well-being. Mercury, on the other hand, tends to exert the opposite influence.

All powerful drugs like arsphenamin and mercury are double edged swords which may exert noxious as well as beneficent effects. That mercury and arsphenamin have relieved suffering, lessened the transmission of disease and saved many thousands of lives is incontestable. On the other hand, it must be admitted that from time to time deaths occur after their use, particularly their unskilful use. The deaths after arsphenamin are rapid, tragic and fear-inspiring and the relation of effect and cause is readily established. Less well known are the fatalities after mercury. These are usually slow and insidious and the relation of the drug to the death is not always recognized. Despite this fact Wolffenstein[4] in 1913 collected from the literature since 1883, 108 deaths after mercurial medication. He adds that many cases are for various reasons not published, and that the actual number must have greatly surpassed this.

Both arsphenamin and mercury, even in therapeutic doses, bring about certain perceptible structural changes in organs.[5] The liver is the organ dominantly vulnerable to arsphenamin and the kidneys to mercury. Ordinarily, the damage is readily repaired and functional and structural integrity of these organs is restored, as occurs in the repair of organic injuries after certain infectious diseases. When, however, danger signals are ignored, and ruthless treatment given, irreparable damage may at times result.

Thousands of cases of syphilis have been cured by mercury alone and by arsphenamin alone, as far as cure can be judged on clinical and serologic evidence. Supporting evidence of cure has been furnished by genuine reinfection and this is far more frequent since the introduction of arsphenamin. The spirochete is vulnerable to both drugs and, in the language of Ehrlich, possesses both an arseno- and a mercuro-receptor. Translated into chemical terms this means that both arsphenamin and mercury have an affinity for the protein of the spirochetic protoplasm, with which they enter into chemical union.*

Theoretical and practical considerations alike demand that arsphenamin and mercury be used in the therapeutic attack on syphilis.

CHOICE OF ARSPHENAMIN TO BE EMPLOYED

Industrious attempts have been made since 1910, in various parts of the world, to produce a compound superior to "606," and thus there have come into existence, neoarsphenamin, sodium arsphenamin, galyl, luargol, silver arsphenamin, arsphenamin-sulfoxylate, sulpharsenol and a host of other compounds. Nearly all of the new products that are really promising are direct derivatives or substitution compounds of arsphenamin. Throughout the world earnest efforts are being made to determine which is the most eligible of these various chemical substances. It may at once be stated that no definitive decision has yet been reached but there are definite evidences of a prevailing choice at the present time.

In the great countries of Europe and in the two Americas, the pendulum of medical opinion has swung heavily towards a preference for neoarsphenamin. To what extent the change from the use of "606" to "914" has been influenced by simplicity of preparation of the solution and facility of injection is difficult to say. It has certainly been a factor, but there are other considerations which must surely have carried weight.

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*It is most probable that the spirochete passes through a life cycle and at times goes into a resting or spore stage. The parasite in this stage may possess a different morphologic appearance and may have different chemical affinities. Therefore, the use of more than one drug is desirable.

"606" has several important advantages over "914." It is a more uniform product. Arsphenamins made in different laboratories will vary less, one from another, than is true of neoarsphenamin. The conversion of "606" into "914" is accomplished by attaching a formaldehyde-sulphoxylate group to one of the aminoradicals, thereby closing the same and lowering both the therapeutic power and the toxicity of the drug. If a part of the other aminoradical is closed, a further decrease in therapeutic influence and in toxicity results. Owing to technical difficulties, different lots from the same laboratory will exhibit variation in these respects. Furthermore, neoarsphenamin is a less stable product than arsphenamin. It undergoes oxidation more rapidly, both in solution and in the dry state, and under certain conditions may deteriorate after long aging.

Despite these disadvantages, neoarsphenamin has come into constantly increasing employment. The main reason for this is that it is better tolerated by the patient. It is, therefore, less liable than arsphenamin to give rise to seriously disturbing reactions which may interrupt the course of the patient's treatment. But above all, it is distinctly the safer drug. The mortality after neoarsphenamin is decidedly less than after arsphenamin.

Meirowsky[6] in 1920, speaking for the German Salvarsan Commission reported the following figures:

Neosalvarsan—160,800 injections—1 death
Salvarsan— 13,000 injections—1 death
Sodium-salsvarsan— 20,000 injections—1 death

These figures are of interest in indicating not only the relative safety but also the relative frequency of the use of these compounds in Germany and adjacent countries. Neoarsphenamin is a blander product than arsphenamin and being neutral in reaction is better tolerated by the blood vessels and the tissues of the body.

As previously stated the value of a parasiticide remedy is to be judged by a joint consideration of its therapeutic properties and its toxicity. The real test is the therapeutic index, which is represented by a relation of the maximum tolerated dose in animals to the sterilizing or curative dose. The greater the tolerated dose exceeds the curative does the more valuable is the drug. Arsphenamin in 0.6 gm. doses is more curative than the average of neoarsphenamins in 0.9 gm. doses but it is likewise more toxic.

Schamberg, Kolmer and Raiziss[7] studying the arsphenamin and neoarsphenamin of six laboratories for the destructive influence on the trypanosome of horse syphilis, found that the activity of arsphenamin was 1.74 times greater than that of neoarsphenamin. In a similar study of the toxicity of these products they[8] found that arsphenamin was 2.4 times more toxic than neoarsphenamin. These studies would indicate, therefore, a higher therapeutic index for "914" than for "606."* Sodium arsphenamin appears to be inferior to "606" and "914."

With reference to silver-arsphenamin a sufficient period of time has not yet elapsed to enable one to express a definite opinion concerning its comparative merits. This is likewise true of arsphenamin-sulfoxylate and of sulfarsenol.

From general considerations let us now proceed to a discussion of methods of treatment.

There are many formulated standards for the treatment of lues but there is no standard. Not a single therapeutic program would to-day command general acquiescence. Every clinician of large experience has modified the treatment according to his personal predilections. The time is scarcely ripe for crystallized formulæ of procedure. Why is this? It is because syphilis is such a variable disease in different individuals that a long period of time is necessary to test methods. It is only by a painstaking comparison of different methods upon a large number of cases in the same stage of the disease that warrantable deductions can be drawn, and these cases would have to be checked up serologically for one to two years. Our large clinics have been rather derelict in making the best use of their clinical material for statistical purposes. It is doubtless because of the great amount of time and labor involved and perhaps also shortage of personnel that this has not been more often done. After symptomatic cure many patients disappear from observation and are difficult to follow up. If we are to develop a standardization of the treatment of syphilis, statistical studies along the lines indicated will have to be carried out. Time will not permit a discussion, nor indeed even an enumeration, of the various schemes of treatment that have been suggested. The greatest divergence of opinion attaches to the dosage and frequency of administration of "606" and "914" and the character and chronologic relationship of the associated mercurial treatment.

Many physicians administer a dose of 0.4 to 0.6 gm. arsphenamin or 0.75 to 0.9 gm. of neoarsphenamin weekly, and in conjunction the use of mercury in the form of the soluble or insoluble injections or inunctions. This is ordinarily continued for about six weeks, after which a rest of a month is allowed and later a second, third or fourth course given at proper intervals.

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*It has since been found possible to produce a neoarsphenamin in which the therapeutic index has far surpassed that of arsphenamin.

Pollitzer of New York has advocated three successive daily doses of arsphenamin, 0.4 to 0.6 gm., or 0.9 gm. neoarsphenamin followed by weekly intramuscular injections of salicylate of mercury for eight weeks. Then a two months' rest and a repetition of the treatment, and a third course after another two months' rest.

A method much in vogue in France is the weekly administration of progressively increasing doses of one of the organic arsenicals, beginning with one decigram and then increasing to 2, 3, 4, 5, 6, etc., in order to avoid complications due to hypersusceptibility to the drug.

Still another method is the straight arsenical treatment, as employed, for instance, by Leredde.[9] Injections of neoarsphenamin are employed at weekly intervals until the Wassermann becomes negative.

Is there any light that can be thrown upon this confusion of advice? Fortunately, some little illumination is at hand. Spiethoff[10] has carefully worked out a "therapeutic unit," consisting of the number of grams of the arsenical or of mercury, necessary to prevent symptoms and to keep the Wassermann negative in primary seronegative syphilis, and with this as a criterion has compared several different methods of treatment in a large number of cases. He concludes that the treatment with early very small doses of arsphenamin gives results inferior to those produced by larger doses; furthermore, that the combined arsphenamin and mercury treatment achieves better end results than the straight arsenical treatment, although, owing to a complicating factor, he still reserves his opinion on this point.

For some years I have, in a large clinic, given straight arsenical treatment, as a result of which I would express the following opinion: It is possible to cure virtually all cases of primary seronegative syphilis by the use of the arsphenamins alone. A high percentage of cases of secondary syphilis can be cured by weekly injections of arsphenamin or neoarsphenamin alone, although some cases run on with a persistent positive Wassermann reaction. Ten injections of arsphenamin appear, in general, to be equivalent to about fifteen injections of neoarsphenamin. The majority of patients will tolerate two doses of 0.9 neoarsphenamin for two weeks and then once a week for eight, ten weeks or longer. That cure can be achieved by straight arsenical treatment is evidenced by the history of one of our patients who developed a fresh attack of syphilis two years after the first attack.[11] All of the criteria of a reinfection were rigidly satisfied.

What are the advantages and disadvantages of a straight arsenical régime? To my mind there is a decreased liability to exfoliative dermatitis and to jaundice and other liver complications. In 15,000 intravenous injections of the organic arsenicals we have observed only three or four very mild cases of dermatitis and about a half dozen cases of jaundice, all of whom recovered. In certain clinics, where arsphenamin and insoluble mercury injections are conjointly given, the incidence of these complications has been much larger.

(See "Report of 58 Cases of Delayed Arsenical Poisoning Following the Administration of '606' and Allied Preparations," by G. S. Strathy, C. H. V. Smith and B. Hannah; Lancet, April 10, 1920, Vol. cxcviii. p. 802. In these cases, gray oil injections were given each week with intravenous arsenicals. Eight of the cases ended fatally with symptoms of exfoliative dermatitis or acute yellow atrophy of the liver).

The vigorous associated use of mercury may readily irritate the kidneys and lessen the rapidity of elimination of arsenic. The drug remains for a longer time in the liver, during which period oxidation or a splitting off of the arsenical group may occur and arsenical poisoning result. Loewy and Wechselmann[12] found that animals that had received mercurial treatment manifested an increased susceptibility to "606" and "914."

I have no doubt that a combined arsenical and mercurial treatment is more therapeutically active and more rapidly curative than the sole use of one or the other drug; but I am equally convinced that unless certain safeguards are followed, an increased risk attaches to such treatment.* I am opposed to the use of intramuscular injections of insoluble mercury given during the regular arsenical treatment, for accumulation of mercury in the gluteal deposits invariably takes place. The safest efficient method of employing mercury with arsphenamin is by inunction and even here the rubbings should not be too intensive. With the joint treatment one can afford to use both the arsenical compound and mercury in more moderate dosage than when they are employed alone. I see no objection to giving small doses of mercury by mouth in conjunction with neoarsphenamin. This would represent a combination of the old treatment with the new.

TREATMENT OF SYPHILIS IN THE VARIOUS STAGES

In speaking of the treatment of primary, secondary and tertiary syphilis, you will pardon me if for the sake of brevity, I present rather dogmatically my own preferences.

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*I have observed splendid serologic results from the use of small doses of arsphenamin 0.3 gm. or 0.6 gm. neoarsphenamin twice a week with mercurial inunctions on the other days. See article by Schamberg and Hirschler, Therapeutic Gazette, Nov. 15, 1919.

The earlier treatment is instituted, the greater is the possibility of cure. The success of prompt local prophylactic treatment is evidence that even external medicaments may be successful if applied before the spirochetes leave the cutaneous tissues. Spirocheticidal remedies we possess, but the problem is to bring them in contact in sufficient concentration with the spirochetes.

Treatment of Exposed Individuals: Ordinarily, the doctrine not to treat a patient for syphilis unless a definite diagnosis can be made, is sound. Otherwise the physician and the patient may both forever remain in doubt as to a syphilitic infection having originally taken place. On the other hand, cases occasionally arise in which it appears to be thoroughly justifiable to give systemic prophylactic treatment to an individual who is known to have had relations with a person suffering from syphilis. Under such circumstances, while one cannot be convinced in an individual case that spirochetic implantation has taken place, experience has proved that a prompt therapeutic attack can prevent generalization of the infection.

The following observation of Lacapere[13] is of interest: Three healthy men, having had intercourse with a woman with active syphilitic symptoms, became frightened on ascertaining the fact. Two of them consented to an injection of neoarsphenamin. They remained free of the disease. The third, who refused the injection, developed a primary lesion. The same writer gave three injections of neoarsphenamin to the wife of a patient who had a primary lesion on the penis, and who, in spite of advice to the contrary, had frequent sexual relations with her. She never developed the disease.

Of great significance is a report by Darier[14] of the Chief of the French Hospital at Manchester, who inoculated himself March 21, 1918, in the presence of twenty physicians, with a little serous fluid from a chancre. In less than an hour afterwards he was given an intravenous injection of 0.6 gm. of arsphenamin. No local or general symptoms developed and monthly Wassermann tests for a year were negative.

I have had several patients who had been exposed to a known active syphilitic, but in whom no evidence of syphilis, either by careful dark field microscope or by the blood test could be demonstrated. In one patient, a young pregnant married woman, whose husband exhibited a recent syphilis, I determined after considerable mental debate, to watch and wait. Several weeks later a positive Wassermann reaction developed. I have ever since regretted that I did not follow my initial impulse to administer to her systemic prophylactic treatment.

In an individual seen within 24 to 72 hours after exposure to a known active syphilitic, two intravenous injections of neoarsphenamin in 0.6 to 0.9 gram doses should suffice to abort the infection. If a considerably longer time has elapsed, then it is perhaps wiser to await the finding of spirochetes in the initial sore before instituting treatment.

The hazard in administering systemic prophylactic treatment a number of days after exposure, is that insufficient treatment may be given, and the patient, having received or assumed assurance of prevention of infection, goes on his way with an illusory security.

It should be remembered that at the time of the first appearance of a chancre, the Wassermann is always negative, and that within ten days after its appearance, only 30 per cent of cases will exhibit a positive Wassermann reaction. After forty days practically all cases give a positive reaction. In an untreated and uninfected chancre, spirochetes may be found in virtually 100 per cent of cases.*

Primary Syphilis: Much has been published concerning the "abortive" cure of syphilis in the primary stage, i. e., cure with a single course of treatment. While there have doubtless been many thousands of successful results, yet the occurrence from time to time of failures has led to a change of sentiment with respect to the security of a single course of treatment. Even in seronegative primary lues, recurrences have taken place after thirty injections of soluble mercury, or ten of insoluble mercury, combined with eight intravenous arsenical administrations.[15] It is now suspected that generalization of infection may take place even though the Wassermann does not yet yield a positive reaction. Second and at times third courses are, therefore, advised even in primary seronegative lues.

I would counsel the employment of two injections of neoarsphenamin 0.9 gm. or arsphenamin 0.3 gm. twice a week for two weeks, then once a week for six weeks. At the same time inunctions of 50 per cent mercurial ointment on alternative days, with a continuance of the rubbings until thirty have been used. After a rest of three weeks the entire course should be repeated. Another rest of three weeks should then be given and, if the Wasserman is negative and no evidence of syphilis exists, mercury by mouth as an added security should be taken three weeks out of four for a year. There is no objection to the employment of three or four courses of mercurial injections or inunctions instead of the treatment by mouth. Oral treatment, however, as an adjunct to the intravenous arsenical medication is not to be held in my opinion in such contempt as many are disposed to regard it.

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*(See article, Klauder, J. V. Early Diagnosis of Syphilis: A Correlation of Clinical and Laboratory Methods, Jour. Amer. Med. Assoc., 1919, lxxii, 693-999.)

It is not at all uncommon for us to find ancient luetics, treated years ago continuously with mercury by mouth, who have negative Wassermann reactions and are free of any evidences of syphilis. To be sure, cases of a contrary character are likewise observed, so that reliance solely on mercury at the present time would be most unwise. As an adjunct, however, to the early use of a powerful arsenical spirocheticide there should be an increased probability of a successful outcome.

Scondary Syphilis: The treatment of secondary syphilis differs from that of primary syphilis only in the sense that more treatment is necessary in view of the fact that spirochetes have been profusely deposited in all of the organs and tissues of the body. To insure complete extermination three courses of the arsenical and mercurial treatment above referred to should be given during the first year and two during the second. In the intervals mercury may be taken by mouth. It may be disappointing to some physicians that the trend of medical judgment is to extend the period of treatment. It must be realized, however, that it is far better in the interests of the patient that he should receive medication in excess of that which is necessary to cure, rather than that it should fall just short of the required amount.

There has been too much tendency to regard a negative Wassermann as evidence of the extinction of the infection. All biological tests are fallible and the great weakness of the Wassermann reaction is in the negative outcome. Not infrequently the Wassermann is negative in the presence of a circumscribed tertiary cutaneous lesion or in certain cases of visceral syphilis. The delicacy of the techinque often means the difference between a negative and a positive. Early negative Wassermanns after brief treatment should be disregarded as an index to further treatment. Every patient must receive an irreducible minimum of treatment, otherwise his future is uncertain. Wassermann tests should be taken from time to time for two years, and mercurical treatment should be continued even in the face of a negative outcome.

Tertiary Syphilis: The treatment of tertiary syphilis is based on rather different principles than that of lues in the earlier stages. Intensive treatment is ordinarily to be avoided, for rapid cure is unlikely and the administration of powerful remedies may do actual harm. Many of these patients have changes in the cardiovascular apparatus and pathological alterations in various organs. They are, therefore, more vulnerable to the insults inflicted by large doses of metallic drugs.

Moderate doses of neoarsphenamin may be given and followed by small doses of mercury. The iodides, while not directly spirocheticidal, have an admirable influence in this stage. It is true of syphilis generally, but with special applicability to the tertiary luetic, that the patient must be treated as well as the disease. Sometimes the suspension of specific medication and the devotion of attention to the correction of digestive, nervous or other disturbances will be of great advantage. Patients over fifty years of age, who have no evidence of active visceral or neurosyphilis, should not be vigorously treated even though they have a strongly positive Wassermann reaction. Many such patients may live to a ripe old age, but injudicious intensive treatment may abbreviate their lives. At all times, during the course of treatment, careful attention should be paid to danger signals, such as renal irritation, jaundice, itching or cutaneous eruption. Moreover, treatment should not be pushed at the expense of the patient's physical well-being.

In conclusion, it may be stated that no crystallized formula of treatment can be adapted to all cases; in no disease is individualization more essential.

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THE TREATMENT OF VISCERAL SYPHILIS*

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In discussing the treatment of any condition it is well to consider carefully what we hope to do, what it is possible to do, how we can do it and in how far the disease can be influenced. In the treatment of visceral syphilis it is evident that there are two parts to the problem. In the first place we have a chronic spirochetal infection, contracted some time before and usually a considerable time before, which has become chronic in the strongest sense of the word. Secondly, we have the changes which have resulted in the tissues as a result of this infection. When we treat visceral syphilis what should we have in view—to try to correct both conditions, or to devote our efforts to one more than the other? Naturally the ideal is to correct both if this is in our power. We can suppose that it may be possible to remedy one and not the other. Take, for example, syphilis of the lung. It may be that the spirochetal infection can be terminated and yet extensive tissue changes remain. True, these represent in some part the process of healing and to this extent are to be desired, yet we do not have a result with complete restoration to normal. It is even possible, for example in the liver, that this may be a result serious in itself. Let us discuss these points separately.

1. *The possibility of freeing the body from the Treponema pallidum.* With our present knowledge it is not possible to speak with any certainty as to the proportion of cases in which this is done. It is to be remembered that visceral syphilis only is under consideration. There are cases in which, so far as the evidence goes, it is done. There are others in which it has not been done. When we consider the work of Warthin, in which he found such a large proportion of bodies harboring spirochetes, we must be very cautious in claiming too much therapeutically. In this connection the distinction must be kept clearly in mind between an infection with *Treponema pallidum* and the clinical manifestations of the disease syphilis. A man may harbor the spirochetes and yet be in perfect health without any clinical signs of syphilis. There seems no reason to suppose that serological tests are always necessarily positive when the tissues contain spirochetes, for the organisms may lie quietly, neither troubling nor being troubled by the tissues of the host. Years later, for some reason, the spirochetes may be stirred into activity and clinical syphilis become evident.

It does not seem possible to be certain, in any given case, that we can kill out the spirochætal infection. All signs may be negative but the spirochetes are there. A comparison may be made with an anthrax infected field on which generations of cattle may pasture without the appearance of a case of anthrax when suddenly, for some reason, the infection becomes active and the disease appears.

It is probable that various tissues react differently in this regard. With syphilitic infection of the aorta very few of us feel, I am sure, that we can have any certainty of having killed all the organisms. We may influence the process in the tissues for the better, but that is all, and the disease is likely to advance sooner or later if it is once established. In the aorta it is difficult to say how much this is due to the *Treponema pallidum* and how much to the changes in the vessel itself. In the liver we have a contrary state of affairs. A syphilitic process there shows little tendency to recur if it is once energetically treated. In all cases the time element is important. Even in the aorta, with early recognition and prompt treatment, much immediate benefit may result but the end results are not very satisfactory.

The matter may be summed up by saying that in treating visceral syphilis we hope to kill out the infection but it is wiser to regard it as being latent and not absent. Certainly this is the safest attitude for the welfare of the patient.

2. *The changes in the tissues.* Here we are on much more solid ground and have greater certainty of what therapy can do. Naturally much depends on the extent of the changes present when treatment is begun, but in general (excluding changes in the central nervous system) we can feel that it is in our power to aid materially in the majority of cases and to have a satisfactory functional result in many cases. How much of this is due to the action of drugs which destroy the spirochetes (arsphenamine and mercury) and how much to the drug which influences the changes in the tissues (iodide) is difficult to say. It is possible that what happens differs in various organs. In the liver, for example, there is no question that in some cases we can cause disappearance of the symptoms by the use of iodide alone. There are few more remarkable demonstrations in therapy than the influence of iodide on the fever of hepatic syphilis. Within forty-eight hours, as a rule, the fever has disappeared. The enlarged liver decreases in size, the jaundice disappears

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

and ascitic fluid is absorbed, all by the administration of iodide alone. Exactly the same result may be obtained in the case of gummata elsewhere. The most plausible explanation is that the iodide saturates the unsaturated fatty acid radicals which inhibit autolysis. The ferments then become active, autolysis follows and the necrotic tissue is absorbed. We may say that in so far as the tissue changes are concerned, the use of iodide is the most important factor. It is well to remember, however, that this does not mean any influence on the spirochetal infection.

In considering the treatment of visceral syphilis, the important influence of disease of the arteries should be remembered. Syphilis is particularly a vascular disease and this plays a large part in the visceral lesions, illustrated best, perhaps, in the nervous system. The specific treatment has little or no influence on the vascular changes, a point to be kept in mind in considering the possibilities of therapy.

Indications for Treatment. Naturally one says diagnosis, but this may be a very difficult matter about which to be certain and a good rule is to play safe when in doubt and treat actively. This brings up the question of the Wassermann reaction and how much we can depend on it as an indication for beginning treatment and as an aid in the decision as to the duration of treatment. One may quote the apt remark that this reaction "is a piece of evidence and not a verdict." A striking example was seen during the past year in a patient with marked signs of syphilis of the liver. He had not received any specific treatment because his Wassermann reaction was negative. The harm which may result from making a fetish of this reaction could not be better demonstrated. In this connection it is worthy of note that in some cases of hepatic syphilis with ascites, the Wassermann reaction is negative in the blood and positive in the ascitic fluid. Certainly in cases of visceral syphilis it is a sad mistake to demand a positive reaction as a preliminary to treatment. A negative Wassermann reaction should have no influence whatever if there are clinical signs or even justified suspicion.

A more difficult problem arises when we ask how far the Wassermann reaction should be regarded as an indication for the duration of treatment. My own feeling is that it should occupy a subordinate place and not be considered too seriously. When we consider the work of Strickler, in which individuals who had not had syphilis, so far as could be determined, were given arsphenamine and subsequently gave a positive Wassermann or luetin reaction, it is natural that the question should be asked as to how often this phenomenon may result from arsenic medication. No one can answer the question but we should all do some hard thinking about it. The reaction may be negative with well marked signs of syphilis. Another point is the great variation in the reaction which may be shown from time to time. But to my mind a far more important argument for treatment without too much attention to the Wassermann reaction is the fact that in every case we are dealing with a chronic infection which we can never be certain has been terminated. In other words the infected individual should be treated for the rest of his life at intervals, no matter how well he may seem to be and no matter what his serum reaction shows. If we adopt this rule and can persuade our patients to be guided by it, much can be accomplished.

To come to the question of actual treatment, as regards the possibility of killing the spirochetes, nothing is gained by any argument as to the relative value of the arsenic preparations and mercury. Both have some drawbacks and dangers, and in my judgment if there were a choice of only one of them, it would be mercury. (This applies to visceral syphilis only.) But as our knowledge is today, both should be given. As is true in the use of arsphenamine, neoarspheramine, etc., in other forms of syphilis there is difference of opinion as to dosage. In visceral syphilis there seems little room for controversy: the dose should always be small to begin with and increased gradually, if at all. One reason is that in all cases of visceral syphilis there is a strong chance of the aorta being involved and it is well recognized that in these cases there is definite danger from the use of the arsenic preparations. This does not mean that many patients cannot take large doses safely, but there is always a risk. In one form of visceral syphilis—syphilis of the liver—the use of the arsenic preparations is contraindicated. The danger of a severe reaction, resulting hepatic damage and perhaps death is considerable. In the past year or so, for some reason, there have been an unusual number of patients showing evidence of hepatic injury after the administration of arsphenamine or neoarsphenamine. The reason is not evident but it emphasizes the danger of the use of arsenic in hepatic syphilis in which mercury and iodide are so satisfactory.

On the other hand, the use of mercury demands a thorough study of the condition of the kidneys before its use is begun (although the danger of renal damage does not seem to be great) and a careful watch over the condition of the blood. There may be a rapidly increasing anemia if mercury is given carelessly—a point worthy of some emphasis.

The actual treatment may be begun by giving arsphenamine or neoarsphenamine (except in hepatic syphilis). In general it is well to give comparatively small doses, say 0.2 gm. arsphenamine or a corresponding relative amount of neoarsphenamine. The dose may be repeated weekly for four or six weeks. It is better to give arsphenamine first and mercury later. If the condition is serious it may be advisable to give a larger amount of arsphenamine after the first dose, but it is wise to increase the amount gradually. If there is any question as to the possibility of danger from arsphenamine, mercury should be begun at once, otherwise after the course of arsenic injections. In hepatic syphilis mercury should be given. As regards the choice of the preparation of mercury, my preference is strongly for administration by inunction. A course of 20 to 30 inunctions should be given, six a week. The results seem to be more rapid and certain than by injection. In some cases we are surer of the drug being given regularly if injections are used, and this is an important point in careless patients. As to the administration by mouth, this should not be employed in the early stages of treatment, but after mercury has been given thoroughly by inunction or injection this may be employed with advantage.

As to the amount of treatment to be given, it is well to give a course of arsphenamine or neoarsphenamine injections, followed by a series of mercurial inunctions. After an interval of two weeks, both should be repeated. Following this a period of three months may elapse before both are repeated. In the interval, mercury may be given by mouth. The mercury and chalk powder in doses of one or two grains three times a day is an excellent form, or the bichloride with iodide or the proto-iodide.

As to the administration of iodide this may be begun at once and continued steadily for some time. If there is any question as to the duration of administration it is well to continue it. The dose must be adjusted to the patient. As a rule moderate doses are usually sufficient and need not go above 30 or 40 grains a day. In hepatic syphilis it seems that the smaller amounts are best and 30 grains a day are usually sufficient. But the problem should be settled for each patient. We would all agree that in syphilis of the nervous system massive doses are advisable. Iodide should be given steadily, or with very short intervals, when it is discontinued, for a period of four to six months, and after this for at least one month in three. It should not be forgotten that some patients who have difficulty in taking small doses are perfectly comfortable if the dose is considerably increased. Another point is the wisdom of giving the drug well diluted in water or milk.

How long should treatment be continued? If we hold the view that the "cure" of visceral syphilis, in the sense that the spirochetal infection is completely killed, is uncertain and difficult of proof then it seems wise to repeat the treatment perhaps twice a year or at least once a year for the remainder of the patient's life. In any case this should be carried out once a year for five years. We know how difficult it is to have this done.

As to other measures, they must be employed when occasion demands. One point is worthy of note—attention to the condition of the blood. This should be watched and proper treatment carried out for anemia. It is well recognized that in some patients the administration of antiluetic treatment results in a rapid improvement in anemia if present, but this should not be taken for granted.

CONCLUSIONS

1. That the "cure" of the spirochetal infection in visceral syphilis is to be hoped for but is uncertain.

2. That arsphenamine and neoarsphenamine should be given in small dosage, especially with aortic disease and not at all in hepatic syphilis.

3. That the use of mercury should be regarded as an important aid in visceral syphilis.

4. That treatment should be given as intensively as possible and repeated if possible once a year for five years, better once a year for the duration of the patient's line.

5. That our attitude towards the Wassermann reaction, whether positive or negative, as a guide to treatment should be a conservative one.

THE TREATMENT OF NEUROSYPHILIS*†

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In order to have a definite understanding of the value of treatment of neurosyphilis one ought to have a knowledge of the reasons cases develop neurosyphilis. While it is probably true that in the majority of cases of syphilis there is an early invasion of the nervous system by the infecting organism it is only in a relatively small number that the central nervous system remains the focus of activity, and of these cases not all show clinical manifestations of neurosyphilis. But why do some of the cases develop central nervous system disorder and others remain entirely free as far as our methods of diagnosis allow us to determine? This is a matter for which there is no definite answer to-day. Of one thing we are certain: cases which receive treatment from the time of the primary sore develop neurosyphilis: meningitis, tabes, paresis. They develop neurosyphilis at times in the early period, at times late; they develop it during treatment or years after treatment has been discontinued; they develop it whether the treatment be arsphenamine or mercury or both. There are cases of syphilis for which the ordinary antisyphilitic treatment, as carried out in our best hospitals and dispensaries, is worthless.

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†From the Neurosyphilis Clinic, Boston Psychopathic Hospital.

I am sure we have all seen cases develop tabes or general paresis in a very few years after the primary infection despite the fact of continuous routine treatment. Two examples may be cited in brief form:

1. A patient, 29 years of age, was admitted to the syphilis room at the Massachusetts General Hospital in 1917 with a primary lesion on the penis. He was immediately put on routine treatment of a combination of six injections of arsphenamine at weekly intervals, followed by fifteen injections of gray oil at a like interval, a period of rest for a couple of months, and then a repetition of the course. The young man was conscientious and continued his treatment. His blood became negative. When seen in the fall of 1919, while still under treatment, he complained of "rheumatism" in both knees. Examination showed that the knee jerks were absent; the spinal fluid was positive. It was necessary to make a diagnosis of early tabes, the symptoms of which developed two years after the primary infection despite ordinary treatment.

2. J. C—. acquired syphilis at the age of 37. As he was a medical student at the time he took the matter with the proper seriousness. He consulted an eminent syphilologist from whom he received weekly injections of mercury for something over a year, and one injection of arsphenamine six months after the primary infection. Less than three years after his primary infection he showed the classic mental symptomatology of general paresis with sluggishly reacting pupils and a speech defect. The Wassermann reactions were strongly positive in the blood and spinal fluid, there were 8 cells per cmm., globulin 2 plus, and a paretic gold sol reaction of 5554332100.

It must be admitted, then, that there are cases which develop neurosyphilis despite the routine type of treatment in general use to-day. There are many conceivable hypotheses that might be offered to explain the reason for this phenomenon, but time and lack of any real knowledge on my part prevent a detailed consideration. The above examples merely offer an opportunity for me to express a point of view, to wit, that we know little about the conditions under which symptomatic and asymptomatic neurosyphilis develops. We know little concerning the best means of preventing its occurrence. This being so, it would seem to follow on logical grounds, and I shall try to show from experiential data that it does follow, that we have hardly any reason for being dogmatic concerning the treatment of established neurosyphilis. I would present as my thesis the statement that there is no possible *routine* treatment for neurosyphilis, even though we divide the cases into types, as syphilitic meningitis early or late, tabes, paresis, or any other classification. Some cases do well on one type of treatment, other cases do poorly on this same treatment but react well to another type. Others do not react well to any form of treatment that has yet been devised.

What we need above all else is a careful study of cases treated by different methods, treated by a combination of several methods, over a long period of time and carefully watched and controlled. From this material we may slowly be able to acquire some information that will be of value. The fact that X number of cases of tabes, treated by intraspinous injections or intravenous arsphenamine plus spinal drainage, show improvement in Y number of cases may have a slight, but not a great value. Many other factors must be known. What would cases giving poor results have done had another method been employed? How advanced were the cases? What was the general condition of the patient as regards his cardiovascular system and other systems, etc.? It is really surprising, in going over the literature upon the treatment of syphilis of the central nervous system, to see how little actual material is to be found.

It has been shown that cases develop neurosyphilis despite the routine type of treatment given from the time of the primary sore. This does not mean that all such cases are inevitably doomed. It means that the type of treatment received was not efficient in the particular case. Possibly more active, more intensive treatment would prevent neurosyphilis. Let us see what may happen to such a case when the treatment is changed.

3. F. C—. developed a primary lesion in July, 1915, when 49 years of age. He was treated by an experienced colleague who gave him a number of injections of mercury, potassium iodide by mouth, and four injections of arsphenamine. Five months after his primary lesion he developed convulsions and became confused. The blood and spinal fluid Wassermanns were both strongly positive, there were 4 cells per cmm., globulin was 3 plus, albumin 4 plus, and the gold sol 5555555310. The patient was then put upon more intensive treat-

ment, receiving two injections of arsphenamine per week, the average dose being 0.6 gms. At the end of four weeks, that is, after about eight injections of arsphenamine, his spinal fluid was essentially negative and he was symptomatically recovered. In a very short time his blood Wassermann also became negative. When last examined, three years later, in April, 1919, although he had practically no treatment in the interim, his blood and spinal fluid were negative. In this case we see a man who developed neurosyphilis in the face of moderately intensive antisyphilitic treatment but recovered by the use of more intensive treatment of the same sort. This type of case is improved by the use of intravenous arsphenamine *provided the dosage is great enough.*

This case is one of the most simple types of neurosyphilis, namely, the meningeal form, but a sufficient dosage of arsphenamine, given intravenously, is valuable in other forms as well. Cases with the clinical and serological findings of tabes or paresis may be just as successfully influenced by general treatment. I will give but one illustration.

5. W. B—'s psychosis began with a convulsion when he was 53 years of age. He was committed as insane with a diagnosis of general paresis. He was found to be confused and quite deteriorated. The neurological examination showed pin point pupils which were rigid and irregular. There was a speech defect. Otherwise the physical examination was negative. The blood and spinal fluid Wassermann reactions were strongly positive. In the spinal fluid there were 20 cells per cmm., globulin 3 plus, albumin 3 plus, and a paretic gold curve. Clinically and serologically the case was one of general paresis. The result of treatment is exceedingly illuminating. He was given injections of arsphenamine, 0.6 gms. dosage twice a week. At the end of three months the only serological change was a lessened cell count, although on some examinations, the Wassermann reaction in the fluid was somewhat weaker, while again it was strongly positive in 0.1 of a c.c. The treatment was continued and at the end of ten months of treatment, the spinal fluid was not only entirely normal but the patient had been symptom-free for about five months. He has remained symptomatically well with a negative spinal fluid for nearly six years (his blood Wassermann has remained continuously positive despite almost 150 injections of arsphenamine).

I feel sure that the routine treatment so frequently employed in syphilis clinics would have been absolutely ineffectual in this case. Had intraspinous injections or some other form been given after ineffectual mild, systemic treatment it would have been a great victory for the latter procedure over the former. However, it seems to me that the long continued use of large doses of arsphenamine did the trick in this case as it has in many others. For such cases intensive, prolonged, general treatment is efficient and adequate.

In contrast to the group of cases of neurosyphilis which general treatment will cure or greatly improve, there is another group of cases in which general treatment seems to be of little avail, and in which intraspinous injections are of great advantage. Much stress has been laid upon this finding to the exclusion of a consideration of the real value of general treatment as shown by the above cited cases. This has led many invetigators to feel that general treatment was not efficient in cases of neurosyphilis. As I have already noted, I believe the truth is that no one method can be considered the optimum for all cases but that where one fails another may succeed. The two following cases are given to illustrate that group of cases in which general treatment fails while intraspinous treatment is apparently effective.

6. G—. first came under observation at the Massachusetts General Hospital in July, 1914, complaining of pain in the chest, vomiting of food, and discomfort which he attributed to the action of his heart. He denied venereal infection and the physical examination was essentially negative. The spinal fluid was negative but the blood Wassermann was strongly positive. During 1914, he received three injections of arsphenamine, Heyden's solution by injection and potassium iodide. In 1915, he received one arsphenamine injection and again the mercury and iodides. During this period his Wassermann reaction varied from negative to positive on several occasions. In 1916, he received six arsphenamine injections, mercury, and iodides. During 1917 and 1918 he received several courses of gray oil. In 1919 he received six injections of arsphenamine and a series of gray oil. The latter part of 1919 he began to complain of headache. The Wassermann reaction was strongly positive. In July, 1920, a lumbar puncture was performed which disclosed a positive Wassermann reaction, 220 cells per cmm., no globulin, a strong luetic gold sol curve, 5443100000. A short series of three intraspinous injections was sufficient to give him a practically negative spinal fluid.

It should be noted in the preceding case that in 1914 the spinal fluid reactions were entirely negative and that in 1920 despite six years of treatment with arsphenamine and mercury the spinal fluid was strongly positive. Two possibilities suggest themselves, either that the treatment he had been receiving had no effect upon the central nervous system and that in due course of events the spinal fluid changes made their appearance, or that the antispecific treatment acted in a provocative fashion. I would believe that the latter conjecture is probably the correct one. Dr. Klauder and I published some cases showing this phenomenon, the provocation of a positive spinal fluid by the use of antispecific remedies. At any rate, the case admirably illustrates the possible superiority of intraspinal therapy over repeated moderate courses of general treatment in clearing up the pathological findings in the cerebrospinal fluid. It is quite possible that more intensive general treatment would have accomplished as much as the intraspinous, or that more active treatment would have prevented the occurrence of the positive spinal fluid findings. The next example, however, would seem to show more clearly the superiority of intraspinous injections in some instances.

7. A. K—. came under our observation in October, 1917, complaining of a marked insomnia. The physical and the neurological examinations were entirely negative, but the patient had a positive blood Wassermann and the spinal fluid was positive in all respects. From October, 1917, to April, 1920, the patient received 57 intravenous injections of arsphenamine with an average dose of 0.3 gm., a small amount of mercury intramuscularly, and iodide by mouth. There was no improvement in his general condition despite the fact that hydrotherapy, sedatives, suggestion, operation on the nose and throat had all been attempted. The spinal fluid reactions showed a strongly positive Wassermann down to 0.1 c.c., 77 cells per cmm., globulin 1 plus, albumin 1 plus, and a gold reaction of 45555531000. During the year from April, 1920, to April, 1921, the patient received four intraspinous injections and nine intravenous injections of arsphenamine. Immediately after the first intraspinous injection the patient recorded symptomatic improvement. After the second intraspinous injection the spinal fluid findings were all weaker, and after the fourth they were entirely negative. It may be interesting to note in passing, that the blood Wessermann became negative at the end of six months of treatment without any change in the spinal fluid findings. There seems little reason to doubt that the clearing up of the spinal fluid findings should be attributed to the use of intraspinal injections and that the intravenous routine alone, at least in the dosage utilized, would not accomplish this effect. Certainly two and a half years of this treatment had been of no avail.

There are far too many cases in which the combination of intravenous and intraspinous therapy does not seem to be of any real or lasting value. It must be recalled, however, that in the usual treatment of neurosyphilis by the intraspinous method, the therapeutic efforts are not very intensive. Injections of arsphenamine once every week or two, intraspinous injections at intervals of two, three, or four weeks are customary. If these methods have value, should they not be pushed in the recalcitrant case to the patient's limit? Possibly better results might then be obtained. We have recently been giving some patients two intraspinous injections per week, associated with intravenous medication. Our experience is too short to draw any therapeutic conclusions but it has been sufficient to show that the patients are able to stand this more intensive intraspinous therapy just as satisfactorily as when the interval between injections is much greater. Therefore, before laying down any very dogmatic statements about the value of intraspinous therapy it would seem that it would be necessary to present cases that have received it much more intensively or much more frequently over a much longer period than has ever been done heretofore. However, I should like to attempt to show that there are cases of neurosyphilis which do very poorly when the combination of intravenous and intraspinous therapy is given, but which react very well indeed to intraventricular injections of arsphenamized serum.

8. A. F—. presented all the conditions on which one makes a diagnosis of general paresis—an apparent rapid mental deterioration, unequal, stiff pupils, exaggerated reflexes, and the characteristic serological reactions. He was given 0.6 of a gram of arsphenamine twice a week, intraspinous injections, mercury intramuscularly, and potassium iodide in large doses by mouth. At the end of ten weeks he had shown no improvement, but rather a progression of symptoms and the serological findings were unchanged. At this point he was trephined and intraventricular injections of arsphenamized serum were given. At the end of three months, after three intraventricular injections, the spinal fluid was entirely negative and the patient was clinically recovered as far as his mental state was concerned and physically he was in excellent condition. At the time of writing this record, four years later, he is still entirely well.

9. A similar picture was presented by A. G—. This patient had his primary infection in 1901. He was given the usual mercurial treatments of that time by one of our most noted syphilologists. Everything went well. In 1916, desiring to get married, he had a Wassermann test performed upon his blood serum which was negative. But a year later, in 1917, he began to have symptoms suggestive of neurosyphilis—chills, sweats, and tremors. He was given intravenous injections of arsphenamine and mercury but he continued to grow worse. By November, 1919, he had a full-blown picture of taboparesis. He was confused, his memory was poor, he was unable to care for himself, his knee jerks and ankle jerks were absent, and he seemed quite demented. At this time the blood and spinal fluid reactions were all strongly positive. He received some intravenous arsphenamine and several intraspinous injections but failed rapidly. In the middle of December, 1919, he was trephined and given an injection of arsphenamized serum. The ventricular fluid at this time was essentially negative although the spinal fluid was strongly positive. Following the first intraventricular injection he became excited and difficult to control. However, this treatment was continued and improvement began. Interestingly enough, coincident with improvement the ventricular fluid became positive. Improvement continued and the spinal fluid became almost negative and for one and a half years the patient has been employed by a municipality as a civil engineer.

(Of considerable interest, aside from the therapeutic results, are the findings in the ventricular fluid. A new chapter concerning the serology of neurosyphilis must be started, dealing with the ventricular fluid in these cases. In some of our cases of general paresis we have found negative ventricular fluids despite strongly positive spinal fluids. In other cases we have found strongly positive ventricular fluids as well as positive spinal fluids. As yet we have been unable to draw any adequate conclusions as to the meaning, either from the standpoint of pathogenesis or as to what the results of treatment will be under these different circumstances. However, in several cases, as in the one under present consideration, a negative ventricular fluid has become strongly positive after an intraventricular injection coincident with the improvement of the patient, the fluid again becoming negative under a continuation of treatment.)

The foregoing cases might seem to indicate that there is a hierarchy of methods, the highest of which is the intraventricular, but a careful consideration of cases discloses a number of facts which show that it is not yet time to attempt any definite rules. If there is one point that seemed to have been satisfactorily established during the past decades and centuries it is that mercury and iodides are unable to cope with neurosyphilis of the type of tabes and paresis. Let us, however, pause a moment and consider the following case:

10. E. S—. acquired syphilis in 1914 at the age of 26. He was a strong, healthy individual. He immediately put himself under the care of a physician. Treatment consisting of a combination of mercury, iodides, and arsphenamine was begun. He seemed to react well. His syphilis did not seem to be of a severe sort. The blood, however, remained positive. Treatment was persisted in, yet in the latter part of 1916, a little over two years after his infection, he had all the characteristics of general paresis. Mental symptoms were present to an incapacitating extent. His blood was positive, his spinal fluid Wassermann was positive in 0.1 c.c.; there were 80 cells per cmm., globulin 4 plus, albumin 4 plus, and a paretic gold curve of 5555321000. He was then given more intensive arsphenamine treatment, namely, injections twice a week, with doses of 0.6 gms. at the beginning and later decreased to 0.3 gms. Under this treatment he seemed to make a clinical improvement and was able to return to work, but this was of very short duration and he soon began to deteriorate more and more. The spinal fluid remained practically unchanged and in January, 1918, showed a positive Wassermann reaction in 0.1 c.c., three cells, globulin 1 plus, albumin 2 plus, and a paretic gold curve of 5543333210. At this time he had received more than fifty injections of arsphenamine. This treatment was persisted in until September, 1918, when the patient discontinued treatment, having shown no improvement. He was given mercury and iodides by his local doctor for a period of time until he developed a severe mercurial stomatitis, causing some necrosis of the jaw and a loss of several teeth. In June, 1920, we saw the patient again. He was in the best of physical condition. Mentally he showed a degree of dementia, but was greatly improved over his condition eighteen months before, and contrary to all expectation his spinal fluid was entirely negative, except for a little globulin. A year later his spinal fluid was again negative as was his blood. What intensive arsphenamine treatment was apparently unable to accomplish in this case mercury and iodides did accomplish.

Can we draw any conclusion from such an experience? Yes, we may draw the conclusion that there is much that we do not know, that mercury under certain circumstances may have a very important place in the treatment of neurosyphilis and that if other treatment does not avail, until this has been tried in large quantities, the patient has not had his full chance.

I have said that where one type of treatment does not serve another type may. Does it not seem reasonable in difficult cases, for instance, such as general paresis, to try the combination of these several methods and to try them strenuously? Yes, it seems reasonable to us and we have started such work in the last eight months. We have submitted a group of paretics to the following routine: intravenous arsphenamine in doses from 0.45 to 0.6 gms., twice a week. On Tuesday an intraventricular injection of arsphenamized serum, on Saturday, an injection of serum into the cisternum magna, on the following Tuesday, an intraspinous injection, and upon the following Saturday, spinal fluid drainage. This cycle is then repeated. Strenuous treatment, no doubt, but it is pleasant to relate that the patients remain in the best of physical condition, put on weight, and in no way do there seem to be untoward effects. What has happened to these patients? Clinically most of them have shown some improvement. Serologically, there has been no noteworthy improvement in any case. Our group has not been large and therefore we would not presume to draw any far-reaching conclusions but merely state that in this particular group, the combination of these methods has not been therapeutically, strikingly successful. In other words, there is a group of patients whom we are unable to help by any of the methods outlined or by the combination of these methods, whereas, on the other hand, there are patients who make great improvement upon one or the other of these methods or with the use of several, or with one method where another is not satisfactory.

We have recently referred to the results of treatment as indicated by the cerebrospinal fluid findings, but a negative spinal fluid is not the entire answer by any means. Obviously and bromidically we are not treating the spinal fluid. Dr. Klauder and I have recently called attention to the frequency with which active neurosyphilis occurs with a negative spinal fluid, and in this paper attention has been called to the fact that there is much we do not know as to the meaning of the fluid findings, as in the case of a negative ventricular fluid or the fluids becoming positive after treatment. So with a case having a positive spinal fluid at the outset of treatment the spinal fluid may become negative and the patient not improve at all. This is seen quite strikingly in some cases of tabetic gastric crises, where under treatment the patient's fluid may change from strongly positive to completely negative, and yet the crises continue unabated. The same holds true, not only in such cases as tabes where one may presume that sclerotic changes have occurred which remain and perpetuate the symptoms after the active process has been halted, but in cases of the more acute meningeal type. If we hark back for a moment to the third case of this series, the patient who developed cerebrospinal syphilis of the meningeal type five months after his primary infection, it will be recalled that under treatment he made a complete clinical recovery and his spinal fluid became negative and remained negative, yet five and a half years later, namely, in 1921, the patient developed a series of convulsions and died. He was serologically negative. One other example of this sort may suffice.

11. R. L—., a man of 41, gave a history of a lip chancre 14 years previously. A month before his admission to the hospital he had a number of unconscious spells, one of which was associated with a transient left hemiplegia. In a few days he became excited, broke windows, and ran down the street in a markedly confused condition. On his arrival at the hospital he was very excited and confused. The pupils were equal, regular and reacted to light and distance, with a slight ptosis of the left lid. The tendon reflexes were all present and equal on the two sides. There were no abnormal reflexes. The blood Wassermann was positive and also the spinal fluid Wassermann. There were 87 cells per cmm., globulin 2 plus, albumin 2 plus, and a gold test of 0012210000. The patient received quite a number of intravenous injections of arsphenamine and a very great clinical improvement was noted. The spinal fluid became negative. He was sent out from the hospital and after a few weeks had a sudden convulsion, was returned to the hospital and died in a few days. Although the spinal fluid was negative, autopsy showed that he had a meningitis with lymphocytic infiltration of the pia.

On the other hand patients may make excellent and prolonged clinical recoveries despite an unchanged spinal fluid.

My intention in the foregoing account was to indicate that we have only begun to scrape the surface of the problem of the treatment of neurosyphilis. There are cases and cases: some do well under one form of treatment, some do well under another, some do not do well at all, and some patients develop neurosyphilis despite a type of treatment under which other cases of neurosyphilis are cured. I would say, in general, that I am optimistic concerning what may be done to help a patient who has neurosyphilis. The best method is the method which produces results in the given case. We must depend still to a large extent upon the trial and error method. We must see what happens and then see if we can do better. Undoubtedly, we can do much for our patients, undoubtedly we can do more than we are doing, particularly if we are optimistic enough to continue week after week, month after month, and even year after year, treating the same patient intensively and unceasingly. Even the most ominous appearing cases, as general paresis, will often do exceedingly well.

In the foregoing I have intended to indicate the following points:

1. Neurosyphilis frequently develops during the course of the usual routine antisyphilitic treatment, which must then be considered inefficient.

2. More intensive general treatment may be quite efficient in such cases.

3. There are cases which do not seem to respond to general treatment, given in amounts approaching the patient's tolerance.

4. Some of these cases will react very favorably when given intraspinous treatment.

5. Again there are cases which do badly under a combination of general and intraspinous treatment.

6. Some of these cases may do well when given intraventricular injections.

7. It does not follow that any one method is supreme for all cases but merely the best for a given case.

8. Thus, mercury and iodides may succeed when arsphenamine fails.

9. There are cases (notably general paresis) where the combination of our present methods is not efficient.

10. The spinal fluid is not the major criterion of success or failure, as patients whose fluids remain pathological may recover clinically, whereas patients whose fluids become negative may succumb from neurosyphilis.

11. Treatment as ordinarily given is far below the patient's tolerance; the frequency with which intravenous arsphenamine and intraspinous injections may be safely given is rarely reached.

I would have you believe that I am optimistic about the treatment of neurosyphilis. Not all cases can be helped. But many cases which are considered incurable can be greatly benefited by intensive and prolonged treatment of the proper sort. We have at our disposal the means with which to help many cases of neurosyphilis, including meningitis, tabes, and paresis. Many of these cases are considered hopeless because of inadequate handling.

DISCUSSION

DR. GEORGE J. WRIGHT (Pittsburgh): I am, as a neurologist, interested in the treatment of neurosyphilis. I have had no experience in the treatment of primary, secondary or visceral syphilis. I think in view of the nature of Dr. Solomon's communication he ought to have some little introduction to those who are not familiar with the kind of work he is doing. I was largely responsible for his being extended an invitation to come, and I am familiar with his work because several years ago I spent some time with him. In the first place, Dr. Solomon is connected with the Boston Psychopathic Hospital, in charge of therapeutic research, and has been for five or six years practically devoting all of his time to this problem of the treatment of neurosyphilis. He has had a training in neuropathology, an unusual training in serology, and besides has an understanding of these potent drugs we use. Also he has a clinic, supported by the state of Massachusetts, reinforced by an efficient social service department, so that he has a really unusual opportunity for attacking the problem of the treatment of neurosyphilis, not only the routine—what might be called "easy" cases—but the cases which have proved so stubborn to treatment in the hands of most of us. I feel, therefore, that his experience is worthy of most careful consideration.

When it comes down to the question of neurosyphilis itself, I feel just as Dr. McCrea has stated with regard to visceral syphilis, that neurosyphilis is a particular problem of its own. It is not a dermatological problem. I believe we owe a great deal to the dermatologists for what they have done, for the information they have given us, particularly regarding serology and the effects of these drugs, their toxicity and all the rest of it; but when it comes to a question of the diagnosis and prognosis and the treatment of syphilis of the nervous system, I believe that is a problem for men who are particularly trained in the study of the affections of the nervous system.

I think heretofore we have been very much handicapped by reports which have concerned themselves largely with the serological side of this question. Not long ago Stokes of Rochester came out with a report in answer to the reports which had come from Dr. Dercum's clinic regarding the value of drainage in the treatment of neurosyphilis. He tried to show that intraspinous treatment had its advantages over drainage, and the whole report was based upon the differences in the serological results. Under intraspinous treatment you have a little better serological results than under drainage. To my mind, that does not by any means answer the question. There was not one word said about the clinical results—whether this kind of treatment or that kind produced better results in focal or diffuse neurosyphilis or paresis or what not. I think both doctors and patients have expected too much from the treatment of neurosyphilis. I think our primary aim should be to relieve the symptoms, whether pain, or ataxia, or headache, or whatever else it may be, and the treatment should be directed toward that end. Indeed, keeping one's eye blindly on the serology while soaking the patient with these powerful drugs will not help one in obtaining the primary purpose, and I believe the more one is in contact with a considerable group of luetics the more one appreciates the fact that the serological side of the problem is not of first importance. We must not forget the fact emphasized by Dr. Solomon, and which we see clinically occasionally, that we can have active cases of neurosyphilis with negative serology; furthermore, we may produce by treatment a negative serology and have very little relief of symptoms; and if, on the other hand, we do produce negative serology and do reduce the symptoms, we are apt to be disappointed by finding that the serology again becomes positive; but if it does become positive that does not run parallel with the symptoms again becoming positive. So that—it is a bromidic statement, but seems to be so often forgotten—the aim in the treatment of the patient should be to relieve him of his symptoms. Our treatment should not be dangerous and we should keep in mind the general physical condition, maintaining that up to the highest possible level. Whether or not neurosyphilis can ever be cured is a question that remains to be answered in the future.

As regards Dr. Solomon's recommendations for this more intensive form of treatment, I myself feel that for the present we must leave to him and to others this problem of the treatment of the more stubborn types of cases. I would not myself adopt nor recommend to any one else not having his skill and facilities, these treatments he is trying out, the intraventricular or intracisternal, or combinations of them. I believe we must still leave to him the problem of the treatment of these cases intractable to ordinary methods.

As far as paresis is concerned and parenchymatous forms of tabes I believe we are as far from the solution of the question as we have ever been. We will have to wait for the future to tell us what to do with these cases, but as far as handling the majority of the cases of neurosyphilis of other types is concerned I feel there is much to be accomplished, provided we do not expect too much.

Dr. David Riesman (Philadelphia): No one who sees the cardiovascular and neural ravages of syphilis, so ably discussed by Dr. McCrea and Dr. Solomon, and the dire effects of the transmission of the disease from husband to wife or from parent to offspring can be indifferent to the great question of how best to treat this scourge—a question that has been answered as far as it is possible to answer it in the present state of our knowledge, by the three men who have taken part in this impressive symposium.

From the communal standpoint, the detection and prompt sterilization of patients with acute contagious syphilis is of the utmost importance, and has been well discussed by Dr. Schamberg. Another phase of the communal problem is the question of marriage of those who have the disease. Education will do a great deal in this respect, but more radical procedures may be necessary, and have been sporadically taken in different parts of the country.

Positive recognition must precede the actual treatment of the disease. The most difficult cases to discover are those in which syphilis attacks the internal organs and the cerebrospinal system. Undoubtedly we have received great help from the Wassermann test, which should be made routinely in all obscure cases. There are, however, at least two drawbacks to the use of this test, but both of these are removable. One is the expense, and the other is the fact that laboratories vary decidedly in reliability. The expense factor can be eliminated by the state's taking over the performance of the Wassermann test, not only for the poor, but for all classes of the community, as its contribution (not the only one, of course,) to the battle with the disease. The variability in the laboratories doing the Wassermann test is inherent in all things not done solely by machines. Until the state takes charge of this work, the physician will do well to arrange with a reliable serologist for the routine performance of the test. A strongly positive Wassermann reaction is rarely misleading. This has been demonstrated in my own experience, once in a case of ulcerative endocarditis and in one or two other instances in which, by all criteria other than the Wassermann test, syphilis could be ruled out. A negative Wassermann reaction does not refute a clinical diagnosis of syphilis, nor does it contraindicate specific treatment if the clinical symptoms present warrant it. The majority of cases of cardiovascular disease, especially aortitis and aortic valve disease, in persons between the ages of thirty and forty-five years, if not due to rheumatic fever, are syphilitic, even though the Wassermann test be negative.

With regard to the treatment of visceral lesions and of those of the mucous membranes, no fixed rules can be laid down. Although arsphenamine cannot be looked upon as an unfailing remedy, the results obtained with it at times are more striking than those that can be secured with mercury. A woman came under my care who had had a linear sore on the tongue for about six months. It was very painful, and interfered with her taking food, anything in the least seasoned causing her intense suffering. Although no history of syphilis was obtainable, and no characteristic lesions of the disease could be found, the Wassermann test was positive. Within twenty-four hours after an injection of arsphenamine, her trouble had vanished and she could eat what she liked. My own amazement equaled hers.

In visceral syphilis, especially that of the liver, I have found mercury more satisfactory than arsphenamine. A man came under my observation who had an enlarged, nodular liver, extending to the umbilicus. He had lost his appetite, was emaciated and so weakened that he had been compelled to retire from business. On account of the mass in the liver, his cachectic appearance and his loss of flesh, a diagnosis of carcinoma had been made by several physicians. No history of syphilis and no other mark of the disease could be found, yet he had a four plus Wassermann. When placed on mercury, his improvement was quite beyond expectation. He is now completely restored to health and back at his business. He has since then had a considerable number of injections of neoarsphenamine, in addition to treatment with mercury and the iodides, but his Wassermann is still moderatly positive. In such a case, I should hesitate to use arsphenamine first, for fear that a too rapid destruction of spirochetes might overwhelm the system with their toxins.

Syphilis of the cardiovascular system is a harder condition in which to secure good ultimate results than is syphilis of the liver. As Dr. McCrea has pointed out, the results of the disease remain after the infection is no longer operative. One reason for this, I believe, is the great strain and constant motion to which the heart and aorta are subjected, which enable the disease to make more rapid progress, and also militate against repair. In the liver, in the spleen, and even in the brain, destruction of the spirochetes and tissue repair are not greatly interfered with by the functional activity of these organs. It may also be said that, owing to the rather precarious blood supply to the wall of the aorta and the devious pathway of the blood in the brain, in comparison with its freer afflux to the liver and spleen, the transportation of arsphenamine and mercury in adequate doses to the former organs is more difficult.

The iodides, while dethroned from their position as spirocheticidal agents, possess the power of causing absorption of gummatous material, and should be combined with the other remedies in the treatment of all exudative forms of syphilis. As regards the choice of mercurial preparations, I have always preferred, in the treatment of visceral syphilis, mercurial inunctions. But whatever the mode of treatment, the important thing is persistence, and this requires intelligent cooperation between doctor and patient.

Dr. Judson Daland (Philadelphia): I think we all have been greatly instructed by these papers, and I shall detain you for only a moment to recall to your memories the dictum by Paul Erhlich, that when we give repeatedly small doses of arsphenamine, we run the risk of making the patient insusceptible to the specific action of the drug, as he has thereby a tolerance. The second dictum, which is exceedingly important always to bear in mind, is that when there is no definite and distinct contraindication, the dose of arsphenamine or mercury should be *as large as possible*, and that there should be appropriate intervals between the treatments, Erhlich's idea being that we should give the strongest blow to the spirochete possible, and then temporarily rest.

Dr. Horace V. Pike (Danville): Dr. Solomon presents a very optimistic outlook for treatment of cases of neurosyphilis. Early cases of syphilis of the central nervous system present, without question, the possibility of cure. However, as an observer for a number of years, of cases admitted to hospitals for the insane, I have come to find that the type of neurosyphilis which can be benefited by arsphenamine, mercury and iodides or spinal drainage, is in the group of cerebral lues.

When the spirochete has once invaded the parenchyma of the central nervous system, and there has been established a well developed case of paresis, I believe the question of treatment is not one of cure, but largely amelioration of symptoms as they arise. In a series of fifty cases, in which I have used intensive treatment—intraventricular, intravenous and intraspinous injections of arsphenamine, complete spinal drainage, together with mercury and the iodides, I have not found one of these cases which at the end of seven years is still living. I do not infer from this that cases should not be treated, and at the Danville State Hospital all cases, save bedridden cases in the last stages of the disease, receive antiluetic medication; but the fact remains that the hope of treatment lies in the early stages of the disease, for when the spirochete has invaded structures beyond the perivascular spaces it is impossible to reach the focus of infection by the present day arsenical preparations, and the most that can be expetced from the type of cases being admitted year after year to state hospitals for the insane, is a temporary remission in the progress of the disease.

Dr. Alfred Gordon (Philadelphia): The subject of syphilis is so vast, so immense, that it is impossible in a short time to make even a few remarks in regard to each phase of it. Every one of us is familiar, the neurologists particularly, with the brilliant results presented by Dr. Solomon. We all know that there is no common treatment. We know that you get as good results with intraspinous as with intravenous and as with intramuscular injections. Personally, I have tried all these methods. I can recall some good cases, and some cases with good results in each kind of treatment. There is no standard treatment, no systematic treatment of cases of neurosyphilis. Just at present I am treating the son of a Southerner, a man from Virginia, whose father is seventy-five years of age, and who confessed to me, while I was treating his son, that he had had syphilis with secondary symptoms some forty years ago. The old man presented absolutely not a single sign of syphilitic involvement of any of his organs. There are cases of syphilis which never develop neurosyphilis. This is all perfectly familiar to every neurologist.

There is one phase of this subject that has not been touched upon. I have reference to so-called "conjugal," that is, syphilis in one of the married parties or both. This is a subject to which I have paid particular attention during the past eight or nine years, and I succeeded in all that period in finding thirty-two cases, the histories of which I followed during all that time down to the present. Conjugal syphilis was reported as far back as 1887, and since then isolated cases have been reported in the foreign literature. I recall particularly a remark by Babinski in 1900 in which he said, "If there is found in the husband symptoms of tabes I look always for symptoms in the other spouse." I was much impressed by this remark, and I began to search for similar or identical conditions in my married patients. I found not only that tabes and paresis can be transmitted from husband to wife, and vice versa, but also other forms of neurosyphilis—for instance, attacks of headache or attacks of petit mal, pains here and there, and attacks of neuralgia of syphilitic nature.

To summarize, I may give a couple of examples to show what we may find if we make a special point of investigating the infection, or the results of the infection, in the family. In one case the husband, thirty-eight years of age, had taboparesis. His first wife lived five years alone and then married again. She married a man heretofore healthy, with negative Wassermann of the blood and spinal fluid. Eight years later he began to show symptoms of tabes. In another case two men, one single and one married, perfectly healthy, both had relations with one woman who, after the death of her husband, showed later symptoms of tabes. Now, the single man three years later began to show symptoms of cerebrospinal syphilis. The other man eight years later began to show symptoms of it. I found in my thirty-two cases that not only husband and wife, but also brothers and sisters, eliminating the question of heredity, have developed symptoms of neurosyphilis by living with brothers and fathers who developed syphilis since their birth.

Dr. Benjamin A. Thomas (Philadelphia): What I wish to say, will bear exclusively upon the primary, secondary and tertiary stages of syphilis. I should like very much to express a little bit more strongly than apparently has been done by the authors of the papers this morning, the importance of administration of full doses of arsphenamine or neoarsphenamine in early treatment of this disease. I feel very confident that the administration of small doses in the beginning, even though continued over a long period of time, very frequently sensitizes the patient to a certain extent, so far as the eradication of the disease is concerned, whereas by early intensive administration under proper control—I do not say the disease is cured because we never know when it is cured—it may at least be kept latent for a long period of time. I say that because I have had since the war a number of cases of ex-service men who were treated during the primary stage in rather small doses, and I am sure that when those patients appeared for treatment with delayed secondaries, that those delayed secondaries or other syphilitic manifestations, were the result of the inadequate dosage primarily administered, and that such belated manifestations have not been the experience of those who have treated patients in the primary stage by maximum tolerant dosage.

With regard to the use of mercury and arsphenamine, I believe arsphenamine or neoarsphenamine is the sheet-anchor in syphilitic treatment, provided there are no contradictions. I see no reason for combining arsphenamine with mercury for a few weeks. I much prefer to give arsphenamine in a series of injections, say not less than six, a week apart, followed by examination of the blood, and spinal fluid also if necessary, after a period of three weeks, and if found positive, a repetition of the series of injections, followed again by repetition of the blood and spinal fluid tests. This, it seems to me, is the best management of a case of syphilis of which we are capable, and much better than to dictatorially state how many injections shall be given. So soon as a negative blood or spinal fluid is attained after this intensive arsphenamine therapy, it is time enough to resort to mercury and mixed treatment.

Dr. Schamberg, I believe, laid stress upon, or mentioned, the fact that a definite series of administrations should be given, and I should like to ask him—not having mentioned the use of the spinal fluid as an additional control—whether he believes in the advice that some have enjoined as to the necessity, following a negative blood Wassermann reaction, of examining the spinal fluid; and in what stages of disease, if any, he believes it is advisable or necessary to do this. I believe in all these cases it is up to the man who treats the case to have a very close follow-up, and certainly in the late secondary, latent, and particularly in the tertiary stage of the disease to renew treatment at least twice a year, fall and spring, throughout the patient's life, rather than to adopt a watchful waiting policy for the advent of trouble, certain, without treatment, to loom up later in life. Certainly the hygienic and dietary supervision of these patients is of primary importance.

It was my fortune a few years ago to have a number of neurosyphilitics referred to me for treatment, and I should like to state, parenthetically, that so far as my experience is concerned I have seen more harm done in the paretic stage of the disease by arsphenamine treatment, associated or not with spinal forms of administration, than good. I have seen arsphenamine, supplemented if necessary, by intraspinal injections, do some good in the early stages of tabes. I feel that more reliance should be placed on mercury and the iodides than on arsphenamine in late syphilitic manifestations of the central nervous system.

Dr. Schamberg (in closing): From the discussion that has taken place here this morning it is apparent to every one that the hope of a therapia sterilisans magna has not been achieved.

Nevertheless, progress of enormous importance has been made in treatment. I agree with Dr. Thomas that in the early stages of the disease it is unwise to employ too small doses of the organic arsenicals. The treatment should be as intensive as is consistent with safety to the patient. This is the stage in which a golden opportunity presents itself of conquering the infection. The later the disease is attacked the more difficult is it to achieve definite and permanent cure. In late cases, however, which are not cured, we can commonly arrest the disease in the sense that tuberculosis is arrested. Many patients, even though harboring spirochetes in the body, may live to a ripe age in average good health and in comfort.

With respect to late visceral or neurosyphilis, the treatment is rather different from that in the earlier stages of the disease. There are doubtless some changes in some of the vital organs and an intensive therapeutic attack may mean a real risk to the patient. I am in complete accord with Dr. Solomon, and I have held this opinion for some time, that the proper method of procedure with respect to the treatment of neurosyphilis is a gradation from the more conservative methods to the more radical methods according to the needs of the individual case. There are many cases of exudative neurosyphilis which will get well under intravenous medication alone. Where this fails we may then resort to spinal drainage associated with intravenous treatment. From this treatment we may in other cases proceed to the Swift Ellis method of intraspinal treatment, and in other cases to the method of Ogilvie. From what Dr. Solomon has stated, there is an indication in certain cases of paresis for intraventricular or intracisternal administration. I believe, however, that with all these treatments the intravenous medication should go hand in hand. It indeed forms one of the most essential parts of the treatment. If there is any maxim or principle that we may set down in the treatment of syphilis, it appears to me to be that *the hazard of the treatment should be measured against the hazard of the disease*. It is certainly justifiable to employ measures, even though attended with a certain risk, in cases of paresis, if there is reasonable evidence to believe that these methods may accomplish good. On the other hand, in conditions which are amenable to methods relatively devoid of risk, we are not warranted in choosing any method that increases the hazard to the patient.

In cases of cardiac or visceral syphilis, the treatment must be extremely conservative, for the advantage gained from the treatments may be more than counterbalanced by possible injury to the patient. In all intensive treatments, the question of the age of the disease and the physical integrity of the patient's organs must be taken into consideration.

I am convinced that many cases of syphilis are cured. The golden opportunity is in the early stages, primary and secondary periods. There is no warrant to be pessimistic about the results which are being achieved. Enormous advances have been made and, in view of the experimental work now being carried on in various parts of the world, we may rationally expect still further improvements in the weapons with which we are combating this important disease.

Dr. Solomon (in closing): Dr. Wright has brought up a point I feel I must say a word about, and that is the relation of the neurologist to the syphiologist in dealing with the question of syphilis. I don't believe the syphilologist, as we ordinarily consider him, is competent to treat all cases of syphilis. Nor do I believe the neurologist is. I don't believe any one man is. The only way I believe we are going to understand syphilis from the neurologist's point of view is that the neurologist should work with the syphilologist. That is coming into vogue in our Boston clinics where the neurologist is attached to the syphilologist's clinic. In his practice the neurologist sees only the bad results, and to him each case of neurosyphilis is a definite indictment against the general practitioner, or the syphilologist (and quite rightly); but until the neurologist becomes associated with the syphilologist in the early cases, he cannot have a definite understanding of syphilis. The contrary also is true, that until the syphilologist becomes interested in the neurological aspects of syphilis he will not understand the treatment.

Now I suppose my paper should have been entitled, "The Specific Treatment of Neurosyphilis." It is very essential to bear in mind that hydrotherapy, massage and general treatment of the patient are matters of greatest importance. One has no right to treat a case of tabes or cerebrospinal syphilis unless he recognizes that the vitality of the patient, his general resistance, is of the utmost importance.

Dr. Pike has brought up a point: I think most of us present will agree as to the hopelessness of the treatment of general paresis. I have only indicated that. There are some cases which have all the earmarks of getting well and remaining well; I have one case that has been well seven years. Now, was that a case of cerebrosyphilis or of general paresis? I don't believe it is worth our while to consider; clinically we certainly cannot tell the difference. If it is a case of cerebrosyphilis it means one thing, we are making a mistake in our diagnosis of general paresis. If these cases, which we all call general paresis, recover, the reason they do is because our diagnosis is incorrect. Then, let us not lay much stress on our diagnosis, but treat general paresis as though it is curable.

I should just like to say that I appreciated Dr. Schamberg's conclusions. He expressed in good English what I was trying to express, and I am very grateful for what he said.

TRANSFUSION: METHODS AND INDICATIONS*

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SAYRE

This paper, necessarily brief, has a twofold object. First, to emphasize the practicability, the broad scope and life-saving character of the operation; and second, to present a strong plea for its wider and more routine use. I feel, furthermore, that I can more convincingly impress these objects by limiting myself to the methods and experiences which we have dealt with at the Packer Hospital at Sayre.

Though the value of transfusion has been a conception in the minds of pioneers of medicine, the technical difficulties involved, the lack of knowledge regarding blood groups, with their marked compatible and incompatible characteristics, precluded anything approaching routine use, until the so-called indirect methods based on various modifications of the syringe-canula method, and the sodium citrate method involving blood decalcification. To-day blood grouping and the technic of transfusion are so simple, the results in all indicated cases range so positively on the side of definite benefit, to the actual saving of life, that it is certain that "ordinary skill and diligence" are not displayed when they are not being used, and used routinely.

We might enter into prolonged discussions on the relative merits of the whole blood transfusion, as exemplified by the Lindeman syringe-canula method, the Unger transfusion apparatus, or the Kimpton-Brown tube, and the other type of indirect method, the so-called citrate method. We have used both methods in hospital practice to an extent and in a sufficient variety of indications to take a position strongly favorable to whole blood transfusion. We have the following reasons to offer:

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1. Without attempting to offer an explanation for such reactions, severe chills with rigor and marked thermal reactions are bound to occur in a considerable percentage of cases following citrate. We know that this does add an element of shock to the patient already badly handicapped.

At the Boston meeting of the A. M. A. Bernheim of Baltimore read a paper based on the dangers of citrate transfusion and evidence of cases of death following citrate methods, which have occurred in rare instances, though skill, careful blood tests and requisite knowledge were by no means lacking.

Two cases—moribund it is true, one from profuse hemorrhage from the uterus due to carcinoma, the other from pernicious anemia—died shortly after citrate transfusion, with typical chills, rigor and hyperpyrexia. That they would have died shortly, in any event, does not afford consolation. We feel that citrate transfusion did it, and I am prepared to admit that it would have been better judgment for the reputation of transfusion as an invaluable aid to have refused it in these two specific cases in spite of the pleadings of relatives. On the other hand, it is rare for a chill to follow methods of whole blood transfusion, and the thermal reaction usually is no more than a degree or a degree and a half of temperature, Fahrenheit, with a slight increase in the pulse rate, or no reaction whatever.

2. The second reason for preferring whole blood transfusion is: We have developed team work and adopted the following system: The apparatus is kept in such readiness at all times that twenty minutes suffices for agglutination tests, sterilization and preoperative preparation. We use the Unger apparatus, consisting of a two-way valve which alternately allows the flow of blood from the donor into a record syringe and its immediate discharge to the recipient. Technical skill is of course necessary but not to an extraordinary degree. We recollect but two failures in a series running into hundreds of transfusions, these failures being due to syncope with resulting loss of vis a tergo in the donor.

An objection might be made that the psychic effect of the procedure, necessitating the donor and the recipient lying arm to arm, witnessing the manipulations, would interfere with successful performance. By tactfully and cheerfully encouraging and diverting both individuals, by projecting one's personality, one can buoy and spiritually support the vast majority of subjects through successful uncomplicated transfusions, never lasting more than twelve minutes. More than one transfusion has been made attractive to the participating parties by the ingestion of an ounce and a half of prime spiritus frumenti. I contend, therefore, that the psychic factor incident to whole blood transfusion need not interfere.

On the other hand, this is to be said of the citrate method: Its fatalities may be numbered in the tens, whereas its record of lives saved mounts to the thousands. Its use becomes less and less a danger as it is used in carefully selected cases that are able to withstand its reactions. It was the only method possible in the army, and there are hundreds of live soldiers who would have died of shock had we refrained from using it because of a small percentage of fatalities. In private practice away from the hospital where the whole blood method is not available or technically possible, the citrate method is always to be used when life is at stake and a transfusion indicated. Everybody cannot do the whole blood method; practically anybody can give the simplest of all methods, a citrate transfusion.

The absolute indications of transfusion—in other words, the obligatory indications—are in cases of progressive anemia due to hemorrhage. We have undoubtedly saved life by this method alone in such cases as exsanguination following tonsillectomy, loss of blood from gunshot wound, traumatic amputation, bleeding gastric ulcer, capillary gastric and intestinal hemorrhage from biliary cirrhosis, hemorrhage in pulmonary tuberculosis, intestinal hemorrhage from typhoid and unknown causes, hemorrhage in the newborn, particularly in the prematurely born (Here transfusion of a few ounces of blood by means of a record syringe, using the anterior fontanelle route to the longitudinal sinus, has brought about almost instant cessation. There are more than fifteen cases, all successful, in our series. The specific action of transfusion in these may be viewed with pardonable enthusiasm), postoperative hemorrhage and postpartum hemorrhage. Many cases of uterine hemorrhage due to fibroid, polyps, or carcinoma, have been rapidly brought to an operable stage. In our work we have repeatedly been impressed with the value of transfusion in case of shock following trauma, without hemorrhage, accounting for the degree of the prostration. These cases will not respond to intravenous injections of ordinary normal salt solution.

The question can always be raised, whether a majority of such cases mentioned might not have lived anyway. Admittedly true, but the items of lives undoubtedly saved, of convalescence and disability markedly shortened, expense saved, patients returned to families and to work, represent at least tremendous economic salvage.

Another point of vast importance is that not only does transfusion not necessarily cause a subsiding hemorrhage to recur, but, we have more often seen active hemorrhage—anywhere in the body—in a markedly exsanguinated patient, rapidly subside and remain quiescent following transfusion in spite of the raised blood pressure. There surely is a definite impetus given to clotting by the mass of whole blood donated. We have never seen hemorrhage increased in volume by transfusion.

A second broad class of indications are those in which transfusion serves not as an immediate saver of life, but in which the procedure replenishes with whole healthy blood in such conditions as:

Pernicious anemia: The prognosis here is undoubtedly not good, but unless we have a patient in extremis, is it not wise to give small repeated transfusions when we have repeatedly thereby helped to give patients an added span of months, and in some cases, years, invaluable to dependents, should the afflicted member be burdened with responsibilities of family?

Sepsis: Two cases of puerperal sepsis, having almost identical symptoms of repeated chills and fever, with remissions lasting 24 to 48 hours, progressive emaciation, progressive anemia, blood cultures negative during remission, with normal temperature, positive for streptococcus hemolyticus when timed with the chill and fever. Both were given single massive transfusions with brilliant success.

Several cases of chronic or subacute sepsis, as for instance empyema following pneumonia, with profound secondary anemia, were given tremendous boosts and the convalescence was materially shortened.

A number of cases of unclassifiable anemia, with all grades of malnutrition, coupled with a marked neurotic stigma, have responded to this method of therapeutics, other measures being of no avail. We question, of course, any definite specific action here and admit readily the psychic suggestion involved.

Whenever possible a preliminary Wassermann is done on the donor; otherwise a Wassermann is done as soon as possible after the transfusion. It so happens that in but one case have we injected blood from a donor having a four plus reaction. Two maximum doses of salvarsan were immediately given, and several months have elapsed with no clinical or serological signs of symptoms in the recipient.

For routine use, since agglutination is the criterion for accepting or rejecting a Wassermann-negative donor, we use the Rous test, consisting of a rapid simple method of mixing nine parts of recipient's citrated blood taken in a white counting pippette from the punctured finger, and a control mixture of equal parts, and we have never found reason to feel that this test was not reliable.

In conclusion, I will restate the main object of this paper:

1. Transfusion, by whatever method, is an obligation, not a refinement, upon us, and ranks foremost as a life saver in hemorrhage of practically all types.

2. Whole blood, using the syringe-canula, Unger or Kimpton-Brown method, or any modification desired, is far superior to the citrate method. Reactions are almost negligible. Fatality is an extreme rarity. This is not nearly so true of the citrate method. Cases must be carefully selected when this method is used. The technical difficulties of whole blood methods are very easily mastered, and its superiority more than offsets these difficulties. The added psychic factors of fear and suspense are very easily eliminated by the operator.

3. The indications for transfusion are clear and broadly varied and the benefits positive.

4. The test for agglutination devised by Rous, or the action of known types II and III sera on unknown cells is amply sufficient to determine compatibility.

5. It should be considered as a routine procedure which will suggest itself first rather than that last prop of the hopeless, "a last resort."

DISCUSSION

Dr. J. M. Wainwright (Scranton): Dr. Lundblad has given us a very stimulating and convincing argument for the more frequent use of transfusion. It can not be denied that by and large many patients who need this life line thrown out to them do not get it. This applies equally to large clinics, small hospitals and even the emergency case in the distant farm house. For, as Dr. Lundblad has said, the technic, at least of certain methods, is so simple that any physician can master it and be prepared to give it under almost any circumstances. In France many transfusions were done in the zone of shell fire and surely conditions nowhere in this country need be such that a mother need bleed to death for want of this help. Instead of taking up this discussion where Dr. Lundblad left off, I would like to call attention to a few points before

Dr. Lundblad's work begins. I am sure that he will be the first to agree with me that after all the best way to give a transfusion is to prevent the necessity for it from ever arising. I feel that what we learned in our resuscitation wards is being rapidly forgotten. Residents are still coming to us from our Baldyized Medical Colleges with the certain conviction that a man can be snatched back at his last gasp with strychnine. If one suggests to an interne that perhaps as much could be done with hot blankets and hot drinks one encounters an absolutely vacant space. Transfusions at times seem to work almost miracles. Yet with proper treatment and support of a patient before operation, artificial heat, good anesthesia, gentle handling of tissues, many and quickly applied artery clamps during operation, with morphine and water before, during and after, many a seeming miracle may be done without transfusion. Where in spite of this the need does arise it is unfortunate indeed if, as Dr. Lundblad says, the patient can not have what the courts fairly speak of as "ordinary skill and diligence." And perhaps the most valuable part of Dr. Lundblad's paper is his suggestion that the day may come when the people and the courts will demand the use of all available means to prevent death from hemorrhage and allied emergencies.

DR. GEORGE M. DORRANCE (Philadelphia): I am very much interested in transfusion and enjoyed Dr. Lundblad's paper very much. I regret that time did not allow him to give the statistics of transfusion more in detail. With Dr. David Riesman, I was one of the first to take it up after it was advocated by Dr. Crile of Cleveland. As I have been through all the phases of it, I feel that I am in a position to judge of the value of the different methods for performing the operation and the indications for its performance.

I agree with Dr. Lundblad that in young children, the syringe method into the longitudinal sinus is the method of choice. I do not agree with him in regard to the question of whole blood transfusion any more than I agreed with Bernheim at the American Medical Association meeting in Boston. Those of us who have done a number of transfusions are able to do them by any of the methods. The citrate method has been very satisfactory in my hands. I gave up my method of direct vein to vein transfusion for it and I see no reason to change. When I do not use the citrate method, I use Kempton-Brown tubes or their modifications. The syringe method and the mechanically connected up appliances of the type of Unger are satisfactory in the hands of the expert, but in the grave crisis—in the severe case where you want blood and want it quickly—the citrate method is the method of choice.

Horsley of Richmond has gone back to the direct method of suturing the vessels together. Sooner or later, he is going to have some of the complications the rest of us have had and at best, any method which directly connects the two together where there is a chance of back-flow or contamination of the donor greatly limits the use of transfusion. To emphasize this, let me cite a case I had in the early days of transfusion. I transfused from a normal patient to one having a low grade infection. Curious as it may seem, the transfusion cured the patient with the infection but the donor contracted the infection and was ill for a year. This experience and others of similar type decided me against connecting two patients together.

The chills and difficulties following citrate transfusion have been remarkably few in our cases. We attribute this to careful typing, using the Moss grouping and using group No. 1 against No. 1, No. 2 against No. 2, etc. I would especially urge that where a pathologist does the grouping he record the method he uses, because, unfortunately group No. 1 of one grouping does not mean No. 1 of another grouping.

A number of cases have been reported where blood collected from extra-uterine pregnancies and placentas have been reintroduced into the circulation. From these reports, it would appear to me that more harm had been done than good. I see no reason for using such a slipshod technique when handling human life. I would much rather trust my life to the use of salt solution.

As to the question of the indications for transfusion, I differ somewhat from Dr. Lundblad. I agree with him in its great value in acute hemorrhage, in hemorrhages of the newborn, in hemophilia and to prepare patients for operation where they have a low blood count. In certain gastric hemorrhages, I would recommend small transfusion so as not to raise the pressure too much. The same thing may be true of typhoid fever. I classify postpartum hemorrhage and postoperative hemorrhage under the term hemorrhage. I disagree with him in the treatment of hemorrhage in pulmonary tuberculosis. They should only be given here in selected cases and then in frequently repeated ones. It is not the indications that interest one so much as the contraindications. There are certain cases of aplastic anemias, frequently classified under the pernicious anemias, where the transfusion will last only two or three weeks. In this disease, it is hardly worth while. In acute sepsis, we can see no indication for it unless it is associated with a grave anemia. In chronic septic cases with secondary anemia, it not only shortens the convalescence but decreases the mortality, so it is to be advised in these cases. In our grouping, we have one or possibly two cases of grave anemias from syphilis which did not respond to specific treatment until after the transfusion.

I agree with Dr. Lundblad heartily in his final statement when he says it should be more frequently used as a routine procedure rather than a last resort. In other words, he means he has been called upon a number of times to do transfusion where he knew it was going to be of no value. I also agree with him that there are a large percentage of cases that would be benefited by transfusion and that the time of invalidism would be frequently diminished.

I disagree with him that for the great emergencies whole blood is necessary, for in my hands as good results are obtained with citrate.

DR. A. I. RUBENSTONE (Philadelphia): I think Dr. Lundblad came here to Philadelphia with a great deal of courage to speak on whole blood transfusion. This is a citrate camp. Most of the hospitals I have investigated use the citrate method. The answers I received were to the effect that the citrate method is easier to perform. I think men should be ashamed to acknowledge that because a certain procedure is the simpler one, they have adopted it as a measure to save and prolong life. I am quite sure that many deaths in Philadelphia have followed citrate and the confession of a man like Bernheim last June at the meeting of the American Medical Association, is certainly worthy of consideration by every member of this Society. Although an advocate of citrate transfusion, he, himself, has almost done away with it and only uses it practically in such instances as war surgery and where the donor is miles and miles away. Under no other circumstances is it permissable to use citrate transfusion. You gentlemen who are surgeons do very complicated operations because technic is all-important, but when it comes to slipping a needle into a vein, you hide behind a simple method used for salvarsan.

My simple method, without the Unger apparatus, with ordinary Luer syringes and needles, especially of large caliber, is the simplest procedure I can recommend to you. We do the operation anywhere down to five minutes, depending upon how much trouble we have with the veins of donor and recipient, and the quantity of blood tranferred. We rarely have to cut down. I have perfected a large caliber needle that directly fits the glass portion of a 50 c.c. syringe, obviating the necessity for using the intermediate metal attachment ordinarily used with a Luer syringe, and so minimizing the possibilities of blood-clotting. This is the simplest apparatus that can be used and although I have tried out the Unger and other apparatuses for whole blood transfusion, I find that their lack of popularity is due to complications in mechanism.

Bernheim says up to forty per cent done by citrate give reactions. I found that almost every one gave me reaction, even though using distilled water. Following transfusion, we found that citrate gave reaction, very indubitable reaction. The whole method as I perform it requires only practice. Any one of you surgeons can learn how to introduce from donor to recipient a syringeful of blood and give the patient up to 1,700 c.c. within five to ten minutes. Now with reference to agglutination of the blood: while we know we have four types of blood to contend with and can very well group our donors, it is a good idea, especially in hospitals or military practice, to have a list of donors on hand. Even the groups are well matched. I would recommend as the easiest test that you do an agglutination test immediately before the operation if the emergency is not too great; because para-agglutinins or minor agglutinins sometimes appear in the blood for a short period. Although a donor might have been a fit one yesterday, you may find on the day of operation that there may be a slight agglutination. The best and simplest method for this I have found in the Roux and Turner technic.

Transfusion has come to be such common procedure, especially with the ease with which citrated blood can be transfused, that it has been relegated to the resident physician in many hospitals with appalling results. For, I should like to impress upon you the importance of clinical judgment in a case to be transfused, both as to quantity of blood and the danger signals during the transference of blood. It is true that, based on Landstiner's observations together with the remarkable work following it, we can determine compatibility of bloods, but even then only in a rough and crude way. Yet reactions arise, due to some unknown chemical or serological incompatibility that is beyond our knowledge to-day, and therefore patients must be watched very carefully during the course of transfusion lest they develop untoward symptoms, as expressed by the short repeated cough, pain in the back, especially along the spine, precordial distress, etc. In patients with diseases of long duration, myocardial degeneration must be taken into consideration, and the quantity of blood transferred to such patients must be guarded so that overloading does not occur. Deaths are frequent due to this alone. In the zeal of the operator, a patient is sometimes overloaded and dies very rapidly. I make it a practice to repeat transfusion as often as is necessary rather than to overload a body incapable of reacting to large masses of blood. The donor's blood pressure should be continuously watched and I place great emphasis on the pulse pressure of the donor in determining when we have withdrawn enough. I may emphasize the fact that team work in carrying out this procedure is very essential for rapidity of action, especially when large quantities are to be transferred.

UNRESOLVED PNEUMONIA*

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An interesting feature of the pneumonias that have been so prevalent of late years, is the predominance of pneumonias of lobular distribution, or bronchopneumonia. Typical croupous, or lobal pneumonia, has been relatively uncommon. Furthermore, in the recent epidemics of pneumonia, the chief etiologic factor has not been the pneumonoccus. Indeed this organism has frequently been entirely absent. The disease has more often been due to mixed infections: notably by streptococci, both hemolytic and nonhemolytic, and by the influenza bacillus, these organisms occurring alone, in combination, or in association with various strains of pneumonocci. Consequently typical pneumococcus lobar pneumonia has been comparatively infrequent, and an unprecidented opportunity has been afforded for the study of unusual and atypical lung infections.

It is a matter of record that some years after the epidemics of influenza in 1889-90, there was a decided increase in the incidence of chronic nontuberculous lung infections. A similar condition of affairs exists to-day. Chronic pulmonary disease of pneumonic origin, is more frequently encountered than heretofore, because of the bacteriological and pathological findings peculiar to the recently prevalent bronchopneumonias. An inquiry, therefore, into certain of the sequellæ found in the wake of these pneumonias, seems timely.

In any discussion of pneumonia, one of the sequels or complications always mentioned, frequently in a most casual manner, is unresolved pneumonia, or delayed resolution. Until lately the importance of this condition has not been sufficiently emphasized. In the past this sequel was apparently not a very frequent occurrence, and when it did occur it often failed of recognition. At the present time, however, as the result of the increased incidence of bronchopneumonias of nonpneumococcic origin, unresolved pneumonia has been observed more often and has received more consideration than heretofore.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

In an attempt to discuss this subject, one is at once confronted with the difficulty that several conditions widely separated from each other pathologically are nevertheless frequently referred to as unresolved pneumonia. The conviction is forced upon one that the diagnosis of unresolved pneumonia is shrouded in considerable uncertainty. In its strict sense, the term unresolved pneumonia, or delayed resolution, applies only to those cases in which, following a pneumonia of some type, there occurs an undue delay in the resorption and organization of the inflammatory exudate, in consequence of which, even when the clinical symptoms have abated, there persist physical signs indicative of more or less infiltration of the lung tissue. The term is not applicable to pulmonary tuberculosis, bronchiectasis, lung abscesses, empyema, interlobular collections of pus, pleural thickening and pulmonary fibrosis—to mention some of the conditions with which unresolved pneumonia is confounded and from which it must be diagnosed.

A survey of the recent literature coupled with personal experience, indicates that following pneumonia there are two main classes of cases that are diagnosed unresolved pneumonia. The first class embraces the true instances of unresolved pneumonia. In the second group are included the pneumonic sequellæ that are looked upon as instances of unresolved pneumonia, but which in reality prove to be some graver complication.

In the first group the clinical picture is somewhat as follows: An individual suffers from a pneumonia. Definite clinical improvement occurs, the constitutional symptoms, notably the fever, subside; but, in spite of this symptomatic improvement, physical signs suggestive of some consolidation persist at the site of the original lesion. Cases of this type have been observed chiefly as a sequel of lobular pneumonia and were noticeably frequent after the late influenza epidemics. Personal experience has been in accord with the observations of Harlow Brooks, who maintains that persistence of physical signs at the site of consolidation, after definite clinical improvement, occurs much more often after bronchopneumonia than after pneumonias of lobal distribution. It is worthy of note that not infrequently such unresolved pneumonias are observed in those whose original pulmonary infection is characterized by such slight clinical manifestations that it is at first not recognized as a bronchopneumonia.

Inasmuch as the symptoms of delayed resolution or unresolved pneumonia are frequently variable, slight, or entirely wanting, the diagnosis of the condition rests largely on the physical examination. This reveals at some area of former consolidation limitation of expansion, some increase in tactile fremitus, impaired resonance to dullness on percussion; as a rule feeble breath sounds, although at times the breath sounds may be harsh and bronchovesicular, some alteration in the spoken voice and crackling râles. The impaired percussion note and the râles, are perhaps the most constant physical signs persisting in these cases, as an associated pleural thickening may obscure and modify the other phenomena. For weeks or even months, these physical signs of residual infiltration may persist, with the signs varying somewhat from time to time. These areas of unresolved pneumonia are found but seldom at the apices, the site of election being the bases or about the angle of the scapulæ. If secondary changes, such as extensive pulmonary fibrosis and an associated bronchiectasis do not develop, these signs gradually clear up and the lungs finally become normal.

Roentgenologic examination of the chest furnishes confirmatory evidence in these instances of unresolved pneumonias. The x-ray plates frequently show marked thickening about the hilum. This thickening extends along the larger bronchi to the smaller ramifications. These thickened bronchi give a striated appearance to the involved portion of the lobe. The area in between the thickened bronchi shows an increase in density, the result of some interstitial infiltration and congestion. The x-ray picture is chiefly that of a bronchitis and peribronchitis, and is of diagnostic importance because by this means other and more serious complications frequently confused with unresolved pneumonias, may be eliminated. As pointed out by Russell H. Boggs in a discussion of the roentgenological aspects of the pulmonary complications in influenza (*Am. Jour Roent.*, Vol. vi, No. 5, p. 240, May, 1919), it is a mistake to regard the x-ray examination of these cases as conclusive. The diagnosis should not rest alone on the roentgenological findings, which must be checked up and confirmed by clinical observations and careful physical examination.

Cases of unresolved pneumonia or delayed resolution of this type, were observed to advantage in the army, particularly after the measles epidemics of 1918 and following the influenza outbreaks in 1918-19. Since these soldiers could be kept under observation from the onset of the acute infection until the subsidence of all pulmonary residua, an excellent opportunity was afforded for studying the progress and the course of this condition. In the military hospitals patients were repeatedly seen who gave a history of having had some infection of the respiratory tract, usually a bronchopneumonia, but who, weeks after all acute symptoms had subsided, still exhibited a cough, sometimes more or less expectoration, and on physical examination showed areas of impaired resonance at the bases or about the angle of the scapulæ with feeble breath sounds and crackling râles present.

Emphasis should be laid on the fact that these lesions were almost always at the bases or at the hilum. Occasionally similar signs would persist at the apices. When this occurred the differential diagnosis of unresolved pneumonia from tuberculosis became an important and frequently a difficult problem. In this connection it is interesting to recall that in the army for a time the majority of these cases of unresolved pneumonia following bronchopneumonia were looked upon as cases of pulmonary tuberculosis.

This experience with delayed resolution in soldiers, is only dwelt upon because the condition was observed so often after the respiratory epidemics in the army. There is no desire to give the impression that the condition is limited to military practice. On the contrary, it will be found present with equal frequency in ordinary civilian practice, provided the possibility of its occurrence is remembered and patients are routinely examined with a view to its detection.

The reason that delayed resolution so frequently goes unrecognized, is because the prevalence of primary bronchopneumonia in adults is not generally appreciated. As has been well pointed out by Nellis B. Foster (*Am. Jour. Med. Sci.,* Jan., 1921, p. 1), we are prone to look upon bronchopneumonia as a disease chiefly of childhood and old age and to overlook the fact that the incidence of the disease is high in ordinary hospital practice, and that it is frequently encountered even in healthy young men. As already mentioned, the symptoms of a bronchopneumonia may be so variable and its manifestations so slight, that too often it goes unrecognized and is looked upon merely as a bronchitis. If cases of this nature are subjectively better and afebrile, even though the cough may persist, it is rare for them to be carefully examined and persistent physical signs indicative of delayed resolution have frequently escaped detection. During the winters of 1919-20 a number of young adults were seen, who for as long as four to six weeks after an attack of influenza complicated by a bronchopneumonia, still exhibited signs of more or less consolidation persisting at the hilus or at the base.

The pediatricians have been more alive to the possibility of delayed resolution. The condition has long been recognized as a not infrequent occurrence in children, especially as a sequel to bronchopneumonia.

An instance of this form of unresolved pneumonia was recently encountered. A child, aged 4 years, suffered from an infection of the respiratory tract. This infection was characterized by fever, cough and dyspnea. Sonorous râles were scattered throughout both lungs. At the right base there was some impaired resonance and many crackling râles. When this child was seen, three weeks after all acute symptoms had subsided, it still suffered from a slight paroxysmal cough. On physical examination, at the angle of the right scapula there was an area of impaired resonance, suppressed breathing and many fine crackling râles on deep inspiration. A sojourn in the country soon did away with these persistent physical signs, confirming the opinion that they were due to an unresolved pneumonia and were not, as was originally believed, evidence of pulmonary tuberculosis.

That slow resorption of the inflammatory exudate should have been particularly common after bronchopneumonia, is not surprising if we but recall the types of organisms that were responsible for the recent outbreaks of pneumonia and the peculiar pathology that resulted in these infections. In many of the pneumonias, especially the lobular pneumonias that followed such an acute infectious disease as measles, the streptococcus hemolyticus was, if not the chief, at least an associated invader. MacCallum has definitely shown that there was a typical pathology characteristic of the pneumonias due to the hemolytic streptococcus and that a marked tendency to organization and early fibrosis was characteristic of these infections. Similarly bronchopneumonia due to the bacillus influenza has been shown to have a pathology of its own. The intense congestion and edema, the high grade inflammation of the bronchi, often leading to weakness of their walls and subsequent dilatation of the bronchioles, the dense peribronchial nodules surrounded by hemorrhage characteristic of influenzal pneumonia, all tend to aid in delaying the return of the lungs to their normal condition. In short, as Packard (*Jour. Am. Med. Assoc.,* Vol. lxxv, No. 23, p. 1537, Dec. 4, 1920) has expressed it, there is a marked tendency in the bronchopneumonia recently observed for the exudate to organize slowly rather than absorb rapidly as is the case in the majority of lobal pneumonias, especially those of pneumococcus origin.

Although, as has been pointed out, unresolved pneumonia is distinctly more frequent after bronchopneumonia, it is nevertheless occasionally encountered after a frank lobal pneumonia, the result of some type of pneumococcus infection. In the experimental pneumonias produced by Blake and Cecil (*Jour. Exper. Med.*, April 1, 1920, p. 403), who injected monkeys with virulent strains of pneumococci and thereby succeeded in producing typical pneumococcus lobar pneumonia, there were several instances of unresolved pneumonia observed. Further evidence that slow resolution frequently occurs even in lobar pneumonia, is furnished by the fluoroscopic studies of Neuhof and Davidson, who found that after pneumonia, there was a thick shadow present over the localized area of consolidation several weeks after the crisis had taken place. These facts, taken with somewhat meagre clinical evidence, would indicate that true unresolved pneumonia may follow a lobar pneumonia of pneumococcus origin, but this sequel of a lobar pneumonia is distinctly uncommon, and such a diagnosis is fraught with great danger and is not to be made lightly.

The risk of making such a diagnosis is emphasized by the second group of cases, that all too frequently are regarded as instances of unresolved pneumonia when in reality they represent vastly different conditions. The type of case that falls into this second class suffers from a pneumonia usually of lobar distribution, sometimes, however, a lobular pneumonia. For the most part the pneumococcus is the dominant organism, but other organisms may be responsible, and in most instances secondary invaders are present. The cases in this group differ strikingly from those in the first group, in that they continue to have fever and there is not the noteworthy abatement in their clinical symptoms. The original fever may become less marked and frequently becomes irregular and remittent, or there may be what appears to be a critical fall, followed, however, by a prompt recurrence of the fever. The patients continue to be obviously sick. A certain amount of pain in the side, cough, dyspnea and even expectoration may continue. In the meantime physical signs persist at or near the site of the original consolidation. These physical signs are rarely typical. There is markedly impaired expansion. Hoover's sign is frequently observed. Dullness persists. Tactile fremitus is variable and is often diminished and the characteristic tubular breathing of a pneumonia gives place to more distant bronchial breathing or even to feeble or diminished breath sounds. Râles of various kinds are invariably present.

In the writer's experience, such persistent physical signs with the *continuance* of fever following a pneumonia of any character are *never due to unresolved pneumonia.* Invariably these physical signs and symptoms are the result of some more serious condition such as empyema, massive or loculated, an interlobular collection of pus or a lung abscess. C. M. B. Camac in a discussion of delayed resolution before the New York Academy of Medicine (*Med. Rec.*, March 22, 1921), stated that in his experience of 139 cases of pneumonococcus pneumonia, every instance of so-called delayed resolution or unresolved pneumonia, was in reality an instance of one of these graver complications.

Several illustrations will perhaps serve to point out the danger of making the diagnosis of unresolved pneumonia in a febrile patient with persistent physical signs.

A middle aged woman was seen in consultation, who exhibited the classical symptoms and physical signs of a pneumonia involving the left lower lobe. Her sputum showed the presence of type IV pneumococci. She was exceedingly ill. On the ninth day, fine râles were heard over the area of consolidation. Her temperature came down almost to normal, the toxemia improved and everything suggested an early favorable termination of her disease. She did not, however, become free of fever, and when seen again on the twelfth day of her disease, although she was distinctly less sick than during the height of her pneumonia, she still suffered considerable cough and dyspnea. There was some pain in her left side. Her pulse was rapid and she was running an irregularly continued fever. Physical examination at this time showed that there was limited expansion of the left side of the chest. Tactile fremitus was diminished from the angle of the left scapula down. There was still very definite impairment of resonance over the left lower lobe. On auscultation, egophony was present over the upper part of the left lower lobe. The breath sounds were not absent. On the contrary, bronchial breathing was distinctly audible and many fine friction râles or crackling râles could be heard. These were especially marked below the angle of the left scapula. A diagnosis of empyema was made, an exploratory puncture was done with the firm expectation of obtaining purulent fluid. However, in spite of repeated punctures over different parts of the left lower lobe, absolutely no fluid could be obtained. Several days later, as the physical signs and fever persisted, an x-ray examination of the chest was made. The skiographer reported that there was no evidence of massive empyema. There appeared to be, however, an area which he regarded as an unresolved pneumonia involving the upper part of the left lower lobe. For the next week or ten days, however, her condition did not improve. Her temperature became more irregular. Her leucocytes still remained above normal. Dyspnea, associated with a non-productive cough and some cyanosis, persisted. By this time the physical signs had undergone a certain amount of change. The dullness was not so extensive as on the former examinations. Diminished tactile fremitus, bronchial breathing, egophony and crackling râles were still present but were limited particularly to an area below the left scapula, which area extended forward into the left axillary line. In spite of the negative results of exploratory puncture and the x-ray findings, the original diagnosis of an empyema was adhered to. The patient was transferred to a hospital and the aid of a surgeon was invoked. A rib was resected over the area where the physical signs were most marked, and after a brief exploration about three ounces of pus were evacuated from an interlobar empyema which had developed in the septum between the upper and lower lobes of the left lung. Following the removal of this pus the patient made a prompt and satisfactory recovery.

Interlobar empyemas, which as Dr. Landis pointed out at the last meeting of this Section, were particularly common after the recent epidemics of pneumonia, are some of the most common and serious sources of error in the diagnosis of unresolved pneumonia. We agree with his belief that the majority of patients who are seriously ill from an alleged unresolved pneumonia, are in reality suffering from this interlobar type of empyema.

That a massive empyema may be confused with an unresolved pneumonia, is illustrated by the following case: Last winter a young man of 17 was seen in consultation. He exhibited very definite evidences of a lobar pneumonia. The attention of his physician was called to the fact that over the lower border of the involved lung, the bronchial breathing was decidedly distant, and that friction-like sounds could be heard. It was suggested that if these physical signs persisted or increased, an exploratory puncture be made. Nothing further was heard of this case until two weeks later when he was again seen in consultation. Then the history was that several days after he was first seen, his temperature had come down to normal by a rather rapid lysis, and that it had remained down for three or four days. However, in spite of the fact that the temperature was down, the patient continued to have an unduly rapid pulse and some dyspnea; otherwise he improved. A week after the temperature had come down, he was allowed to sit up in bed. The patient after this complained of urgent dyspnea, his pulse went up to 120 and the temperature when again taken was found to be 102. The attending physician admitted that the affected side had never become entirely free of physical signs, that râles were audible, but that his condition was believed to be one of unresolved pneumonia. When seen this second time, ten days after the temperature had come down for a time to normal, the patient was found lying on the affected side suffering from a continuous and rather urgent dyspnea. The pulse was rapid and the boy was obviously toxic. Examination showed limitation of expansion, increased diameter of the affected side, marked dullness to flatness extending up to the third rib anteriorly, with displacement of the heart to the right. On auscultation distant bronchial breathing was audible over the entire affected side, egophony was present and some crackling râles and frictions were audible. An exploratory puncture revealed the presence of pus, so in order to relieve the urgent dyspnea his chest was aspirated and 2,000 c.c of purulent thin fluid were removed. Subsequently a surgeon was called in, the pleural cavity was drained and after a prolonged illness the young man finally recovered.

In the experience of every internist, cases similar to those above described have occurred, indicating the distressing frequency with which empyema and lung abscesses are regarded as instances of unresolved pneumonias. The lesson to be learned from such experience is obvious: Never make the diagnosis of unresolved pneumonia or delayed resolution in a case of pneumonia that exhibits persistent physical signs until all of the more serious possibilities have been thought of and carefully excluded. The one diagnosis which should always be uppermost in our minds, but especially in a case of pneumonia that continues to have physical signs associated with either fever, an increased pulse rate or dyspnea and a leucocytosis, alone or in any combination, is *empyema*. The possibility of a loculated or an interlobular empyema should never be lost sight of. If due consideration is given to the presence of fever and other symptoms, if x-ray examinations are made, if leucocytes are counted and if the exploring needle is freely used whenever doubt exists, it is safe to say that the danger of diagnosing unresolved pneumonia, when in reality a collection of pus is responsible for these signs and symptoms, will be reduced to a minimum.

In spite of the fact that empyema is the most common complication or sequel of pneumonia, the diagnosis is missed or undue delay occurs in making the diagnosis with surprising frequency. This is due to several facts. In the first place it is not generally realized how often empyemas are loculated either in pockets formed between the parietal and visceral layers of the pleura, or between the lobes. In the second place, as has been pointed out by Nellis B. Foster (Loc. Cit.), there is a tendency on the part of some to refrain from making a diagnosis of empyema unless the constitutional symptoms of pus are present, and unless the physical signs conform to those that are described as typical.

The more one sees of empyema the more one is forced to the conclusion that there is no such thing as a typical temperature curve in empyema, and that empyema usually exists without the classic hectic fever. It is even more apparent that there are no pathognomic signs of an empyema. It should be more generally appreciated that even over considerable collections of pus, the breath sounds may not only be present, but are often actually bronchial. Râles due to the association of inflammation and congestion of adjacent lung tissue are commonly heard, and the significance of egophony must not be underestimated.

This second group of cases has been stressed not because they represent in any sense true instances of unresolved pneumonia (although it is undeniable that surrounding areas of loculated pus, whether they occur in the pleura, between the lobes or as lung abscesses, produce congestion and inflammation of adjacent lung parenchyma which modifies the resolution of the original pneumonic process), but because they represent cases that are continually being confounded with unresolved pneumonias, a group of cases that are amenable to treatment, that require urgent but skillful surgical intervention and in which delay due to mistaken diagnosis may prove a most serious consequence.

In addition to empyema, unresolved pneumonia may be confounded with gangrene and abscess of the lung. In the former instance the fetor of the breath, the character of the sputum, the occurrence of fever, and the x-ray findings are usually sufficient to make a diagnosis with but little difficulty. Pulmonary abscess may prove more difficult to recognize, but as a rule the characteristic paroxysms of coughing, the large quantities of purulent sputum brought up at intervals, together with the fever and x-ray findings are sufficient to differentiate this condition from an unresolved pneumonia.

Thickening of the pleura, neoplasms of the chest and interstitial pneumonia or fibrosis of the lungs may also at times be confused with an unresolved pneumonia. As a rule, however, the history and the course of these conditions, is sufficiently characteristic, when taken in conjunction with the x-ray findings and physical signs, to make the diagnosis. It must be borne in mind, however, that an interstitial pneumonia or a fibrosis may occur as the direct consequence of an unresolved pneumonia.

There is, however, one more condition which frequently has caused considerable confusion and which may easily be mistaken for an unresolved pneumonia, namely, pulmonary tuberculosis. In recent years so much has been said in reference to the diagnosis of tuberculosis from different conditions, that it is scarcely necessary to dwell upon it here.

The differentiation of unresolved pneumonia from pulmonary tuberculosis has been well taken up by Ash (*Jour. A. M. A.*, Jan. 22, 1915) and later by McCrae and Funk (*Jour. A. M. A.*, July, 1919). The first observed a series of 551 necropsies on individuals who were supposed to have had pulmonary tuberculosis. He found that 11% were nontuberculous. Of this 11%, eleven were suffering from pneumonic sequelæ of which one was a case of unresolved pneumonia. McCrae and Funk have given the question careful consideration in their paper which deals with a discussion of the diagnosis of 1,200 successive admissions to a tuberculosis service. Of this number 6% were found to be nontuberculous. Of the 6%, nine were suffering from pulmonic sequelæ of which three were instances of unresolved pneumonia. The diagnosis of unresolved pneumonia from tuberculosis was taken up with especial care in the army hospitals when, as has already been mentioned, following the influenza epidemic it was found that a large number of those who were sent to the hospitals with alleged tuberculosis were suffering in reality from an unresolved pneumonia. In brief, it may be said that the differential diagnosis between an unresolved pneumonia and pulmonary tuberculosis rests chiefly on the following facts: In unresolved pneumonia the physical signs are practically always localized to the lower lobe, whereas in tuberculosis the contrary is true. In unresolved pneumonia there is a notable absence of all symptoms although the signs persist, whereas in tuberculosis the constitutional symptoms are almost invariably present in a case which exhibits definite physical signs. The x-ray picture of the two conditions is dissimilar. In cases of unresolved pneumonia repeated sputum examinations are always negative for tubercle bacilli. And finally the cases of unresolved pneumonia tend to clear up with fair rapidity and get well, whereas those of tuberculosis are more apt to show an advance in the conditions. A diagnostic difficulty arises when a pneumonia of pneumococcus origin develops in a tuberculous individual. Under such conditions resolution is, as a rule, slow even though the pneumonia is quite independent of the preëxisting tubercular infection.

Just what factors are responsible for the production of unresolved pneumonia is unknown. Certain conditions are recognized as predisposing to the development of delayed resolution. It has long been known that unresolved pneumonia is more apt to occur in children and in the aged and in those who are debilitated and suffering from some chronic infection or visceral disease than in those that are otherwise healthy. Syphilis has been suggested as a possible cause for some cases of delayed resolution. Head and Seabloom made a study of delayed resolution following pneumonia in luetic soldiers at Camp Wheeler in 1918-19. They report two cases in which definite delay in the absorption of pneumonic exudate occurred in soldiers that had markedly positive Wassermann reactions. In these cases resolution was greatly helped by the use of arsphenamin. It is highly probable that many of the so-called cases of pulmonary syphilis are in reality instances of postpneumonia delayed resolution occurring in syphilitic subjects, in whom the pulmonary lesion clears up only after the underlying general infection is treated.

The relationship between delayed resolution and infection of the upper respiratory tract has been pointed out by both Alex. Miller and Dr. Riesman. These also independently reported several instances of persistent bronchopneumonia of lobar distribution, which cleared up only after an associated infection of the upper air passage (such as diseased tonsils, sinuses, etc.) was eliminated.

Until we are more familiar with the exact mechanism of resolution in pneumonia, it will be impossible to throw much light on the problem of unresolved pneumonia or delayed resolution. Frederick T. Lord (Tranc. Assoc. Am. Physicians, 1919) has devoted much time to the study of the resolution of pneumonia, and has summarized our present knowledge of the subject. Douchez, Clough, Bull and Cole, as well as other workers, have shown that in the course of a pneumonia various protective substances are elaborated, which circulate in the blood and doubtless play an important rôle in checking the activities of the pneumococcus. In addition to this humoral immunity, it has long been known that enzymes are probably responsible for solution of the pneumonic exudate, and Lord is convinced that certain additional local biochemical changes in the disabled lung materially aid these other factors in producing resolution. He believes that in a pneumonic lung there occurs a local increase in hydrogen ion concentration, and that the dissolution of the pneumococci proceeds at first slowly and then more rapidly as this local acidosis increases and when the local hydrogen ion concentration has reached the acid death point of the pneumonoccus, that is when the PH equals 5.1 or more, the crisis occurs.

It is more likely that resolution in pneumonias is brought about, not by any one of these factors, but by a proper coördination of all. It is conceivable, therefore, that if one or any combination of these mechanisms which aid in bringing about resolution fail, the normal mechanism is disturbed and delayed resolution, or an unresolved pneumonia, results.

PROTRACTED UNILATERAL BRONCHOPNEUMONIA OF LOBAR DISTRIBUTION*

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In 1913[1] I described a peculiar form of subacute or chronic inflammation of the lung, of which I could find no very satisfactory account in the literature. It is characterized by involvement of one lower lobe; by a slow, protracted course, with low fever and moderate or severe cough; and by very slight impairment of the general health. Since 1913, a number of similar cases have been reported by other observers,[2] especially by men whose practice is largely among the tuberculous, and to whom these cases are referred through mistaken diagnosis. The literature is now, I believe, sufficiently abundant and definite to justify us in considering the condition as a distinct clinical entity. In the textbooks, however, it is not as yet adequately treated, which may account for the fact that in practice, it is often overlooked or, at least, misinterpreted.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

In order that I may bring the clinical picture of the affection clearly before you, I shall describe a few cases:

CASE I. J. M., 25, single, a hat worker, complained of cough and soreness in his chest. It had begun nearly six years ago, but had been worse for the past two weeks. There was a fairly abundant, whitish expectoration, but no shortness of breath. The appetite was good, and the weight was increasing. The previous history and family history were entirely negative. The temperature was 99.4°; pulse, 96; weight, 177¼ pounds; blood pressure, 112 systolic and 75 diastolic. Physical examination showed slight impairment of resonance over the left base, with preservation of the tactile fremitus. On auscultation, crackling râles were heard over the entire left lower lobe, chiefly posteriorly, in the axilla and over the lower anterior portion of the lung. The patient was seen a few days later. The physical signs were entirely unchanged, but the cough had been somewhat lessened by a sedative expectorant.

CASE II. A. S., 22, single, a native of Russia, and a salesman by occupation, came to me for an examination of his lungs. He had had grippe a year before, was in bed two weeks, and thought that he had never fully recovered. He was coughing a great deal and expectorating a yellowish mucus. There was a little shortness of breath. His previous history was entirely negative, except for the fact that he had always been subject to colds. Physical examination showed numerous râles over the left lower lobe posteriorly and in the axillary region; nothing definite anywhere else. The temperature was 98.1°; weight, 126½ pounds. Five months before, it had been 135.

CASE III. Mrs. T., married, a native of Russia, aged 21, seen with Dr. I. V. Levi. A persistent cough had convinced her that she had tuberculosis. She used to cough in childhood, and her father had chronic bronchitis. Otherwise, the family and personal history were good. Physical examination showed slight impairment over the left lower lobe, with a shower of râles, increased on inspiration and by coughing. These râles extended all the way around from the spine to the anterior axillary line. The temperature ranged from 101° to 103°. The sputum was negative for tubercle bacilli, although once or twice it contained blood. The patient made a complete recovery after about two months.

CASE IV. H. S., married, a native of Russia, 34 years old, and a worker on suitcases, had had grippe two months before I saw him. Since then, he had had pain in the back and a rather severe cough, worse in the mornings, and sometimes causing him to vomit. The expectoration was scanty and free from blood. Night sweats had occurred, and the breath was a little short on exertion. He had had bronchitis nine years previously. His weight had been 143 pounds three years before I saw him, but had decreased to 123¾ pounds. He had been on a strike for six months and had had a hard time, which may account in part for his loss in weight. Physical examination showed, as the most important finding, a shower of fine râles all over the left base, without any definite signs anywhere else.

CASE V. B. F. H., 45, married, a merchant, born in Pennsylvania, and residing at Phillipsburg, Pa., was referred to me by Dr. W. B. Henderson. Three months before, he had contracted a cold. He had some pain in the chest, with a cough and abundant expectoration, which was never blood-streaked. Both the pain and the cough had nearly gone; but he wanted to have an examination because he fatigued easily, was mentally depressed and had lost some weight. The principal signs, on physical examination, were numerous moist râles over the left base and in the left axillary region, and a few scattered ones on the right side. Tactile fremitus and the percussion note were normal. Temperature, 98.6°; pulse, 72; blood pressure, 154/80; weight, 134 pounds; best weight, 150; blood count and urine, normal.

As is evidenced by the brief recital of the foregoing cases, the most striking feature of the disease is the presence of a lesion at the base of the lung, in the lower lobe, without concomitant involvement of the apex. The infection is primarily and almost exclusively a basal one and, in the vast majority of cases, involves but a single lower lobe, the left perhaps a little more often than the right. I am inclined to the belief that the condition may occur in the upper lobe; but it would be difficult to exclude tuberculosis in such a case, even though bacilli were absent from the sputum.

Liebermeister[3] has recently described a series of apical cases in which the symptoms and physical signs suggested tuberculosis, but in which the sputum, even by the antiformin method and the tuberculin test, was invariably negative. One of the patients died, apparently from paratyphoid—B infection. At autopsy, the apex of the affected lung was found to be the seat of a nontuberculous bronchopneumonia. In the other cases of this type, recovery took place. Liebermeister believes that the condition is an unresolved grippe infection.

A few similar cases of apical involvement that cleared up eventually, without residue, have come to my notice; but for all practical purposes we may consider the condition as one preëminently basal, and we may say further that a process primarily located at the base of the lung is almost never tuberculous. It has been stated by some that tuberculosis is never basal, but this is not strictly true. Thus, Rosenthal[4] has recently reported three cases of definitely primary basal tuberculosis; but, as these three were found among one thousand consecutive admissions to the Bedford Sanatorium, the error in the one hundred per cent statement is not a large one.

I have myself lately had under my care a physician, twenty-eight years of age, who, about two weeks before I first saw him, and while apparently in perfect health, had been seized with a sudden pulmonary hemorrhage. Examination showed very slight impairment at the apices, without râles, and without material change in the breath sounds; but over the right lower lobe, particularly at its middle posteriorly, and also at its base, there was an abundance of fine moist râles, increased on coughing. The tactile fremitus and vocal resonance were somewhat intensified, the breath sounds harsher than normal. The sputum, which continued to be bloody for about ten days, contained tubercle bacilli. X-ray examination showed a little opacity at the apices, and distinct tuberculous involvement of the right lower lobe. While under observation no change took place in the apices. No râles appeared. The physical signs in the lower lobe became a little less pronounced, but did not entirely disappear. The bleeding, however, ceased and the patient improved in a most satisfactory manner, so that he was able to leave for the South after about two weeks. Barring the first day or two, there was virtually no fever throughout his two weeks' stay in the hospital.

From the clinical point of view, this case could be looked upon as one of primary basal tuberculosis; for the signs at the apex were minimal, and may be considered as old or inactive.

Among all the cases of unilateral bronchopneumonia of lobar distribution that I have seen, there has been only one in which tuberculosis supervened. The history of this case is as follows:

S. B., 18 years old, a clerk, was seen in April, 1915, with the characteristic signs of unilateral bronchopneumonia at the left base. He had a cough, which had come on insidiously, and had existed for some time. An x-ray examination showed a little diminution of movement on the left side, an undue prominence of the root shadows, and an increase in linear markings on both sides of the chest, even up to the apices, but more marked towards the bases. There was also some glandular enlargement. I did not see the man again until February 13, 1920, nearly five years later. He had been fairly well in the interval, until he had an attack of "flu," since which, for five or six months, he had had a persistent cough. I now found limitation of movement on the left side and impairment over the greater part of the left lung, especially over the left base, with an abundance of râles throughout the left lung, but most abundant over the left lower lobe. The sputum at this time contained tubercle bacilli. Although one cannot be sure, it is possible that the tuberculosis followed upon the "flu" infection, and the earlier process that the man had presented in 1915 was a simple unilateral bronchopneumonia. In any event, no other case has shown, even after long duration, any evidence of tuberculosis.

Onset and Symptoms. The disease starts either acutely like a cold or a grippe attack, or insidiously, so that the patient is unable to give the date of the beginning of his illness. It does not seem to follow acute lobar pneumonia, and is what it is from the very start. When first seen, which, in my cases, has usually been some time—perhaps weeks or months—after the onset, the patient complains of cough, slight fever and a tendency to tire easily. The temperatures are between 99° and 101°; sometimes a little higher. The pulse is moderately accelerated. The respiration is not affected, except that at times there is a little shortness of breath on effort. The cough is often harassing; at other times, in its trivial character, entirely out of proportion to the local conditions in the lung. The sputum, variable in amount, is usually frothy, and sometimes blood-streaked. At times, a frank hemorrhage occurs, which naturally leads to the belief that tuberculosis is present. One of my patients periodically spits up blood-streaked mucus, but in no way can any evidence of tuberculosis be discovered. Slight pain, either pleuritic or muscular, is at times present. The appetite remains fair. As a rule, there is little loss of flesh; but in most cases there is a tendency to physical exhaustion, and not rarely to mental depression. On the whole, however, the general health suffers but little, even after months of illness—an observation confirmed by Miller[5] in his cases.

The physical examination, if it is thorough, will show that the percussion note over the lower lobe of one or the other lung is slightly impaired. The tactile fremitus may be unchanged, or it may be slightly increased or diminished. The voice sounds, on auscultation, are usually somewhat augmented. The most striking and, to those not familiar with the condition, the most unexpected feature is the presence of a superabundance of moist, crackling râles, limited to the lower lobe. In character, the râles resemble those of pulmonary edema, but are a little louder and not quite so uniform in size. Sometimes they are heard as soon as the ear is applied to the chest; at other times, only at the end of a deep inspiration. Coughing usually increases them greatly, and sometimes produces them, if they have not been heard before. They seem to be close to the ear. As a rule, they are heard from the upper border of the lower lobe to its base, and from the vertebral spine forward to the midaxillary line or to the anterior part of the chest. In this area, the râles, as well as the other less conspicuous signs, may be unaltered for weeks or months—and even, perhaps, for years. It is amazing to find how unvarying, both in character and in distribution, the signs may remain; in no other affection have I observed such constancy. Other parts of the lung, especially the apices, show little abnormality, no matter how protracted the course of the affection in the lower lobe. Occasionally a few scattered râles may be heard in the lung of the opposite side.

In a few instances, pleural friction is present in a limited area of the affected lobe.

In none of the cases have I observed clubbing of the fingers, such as occurs in other pulmonary conditions of long standing. The blood and urine reveal nothing significant. There is no leukocytosis.

The roentgen ray findings are usually very slight, in marked contrast to the physical signs on auscultation. Some cases show on the x-ray plate an increased density of the linear markings, such as is common in persons who have had repeated attacks of bronchitis; but at no time are the characteristic changes indicative of tuberculous infiltration to be found. Pleural adhesions may be present, especially in long-standing cases. Although looked for, in no instance was a foreign body discovered.

The cases of unilateral bronchopneumonia may be classified into acute, subacute and chronic. The physical signs vary little in these three groups, the separation being based chiefly on the history. It is possible that some of the subacute cases are, in reality, recurrent acute cases. The whole classification is, however, arbitrary, and is scarcely corroborated by corresponding physical signs.

The duration of the disease, taken as a whole, varies, but is seldom less than two or three months. The longest case that has come under my observation has lasted ten years and is still showing the same physical signs as were found at the beginning. The case is of sufficient interest to justify a brief recital, the more so as it is one of those reported in the original paper.

The patient is a physician, now thirty-seven years of age and single, whose history is as follows:

After a trivial cold, in May, 1911, he had a sudden pulmonary hemorrhage. He recovered, and was well, except that he had a slight cough, until September, 1913, when he had another hemorrhage. In the first he lost about a pint, and in the second, half a pint of blood. A third and smaller hemorrhage occurred in 1914. Thereafter, although he coughed, he did not spit any blood until February, 1916, when he brought up a few clots after an attack of acute bronchitis. From that time on the cough was distinctly more severe, and led to a left-sided inguinal hernia. On September 30, 1918, following a cold and overwork at the beginning of the influenza epidemic, he again had a slight hemoptysis, which continued for a period of nearly five weeks. Throughout that time he was in bed. During the year 1919, the cough having continued all the time, he had sixteen sputum examinations, all of which were negative for tubercle bacilli. A guinea pig, inoculated with the sputum, remained healthy. On April 20, 1919, after an acute attack of tracheobronchitis, he had another attack of hemoptysis, which lasted until May 5th. Thereafter, at intervals of a few weeks, he brought up a few clots or some blood-streaked sputum, and has done so virtually up until the present time. Throughout his illness of over ten years he has had very little disturbance in his general health. His weight has increased; his temperature has usually been 98.4° and 98.8°, with an occasional rise to 99.4°. He has attended to his practice, except during the periods of blood-spitting. He perspires freely, but not more than he did in his earlier years. For the past twelve months he has been a little short of breath on exertion, perhaps due to the fact that he has grown rather stout. For six or seven years past, he has been subject to migraine, which of late has become more severe.

His previous history is negative, except that he always took cold easily. In 1916, he had an attack of typhoid fever, of moderate severity. Recently, he lost a sister after a short attack of bronchopneumonia. Otherwise the family history is good.

Physical examination is negative, except for the signs in the left lung. Over the lower lobe the percussion is impaired, tactile fremitus and voice sounds are increased. All over this lobe, from its upper border to its base, and from the spine forward to the antero-axillary line, an abundant shower of moist râles can be heard. The râles are increased on coughing, and are not altogether uniform, varying slightly in size. It is an interesting fact that as the signs are now, at this writing, so they were when the man returned under my care in February, 1921, and so they were when I first saw him, in 1913.

The sputum has, of course, been examined not only for tubercle bacilli, but also for other organisms, for streptothrix and fungi of various kinds, both in my laboratory and by Dr. John A. Kolmer. The sputum, in appearance, is thick, whitish and a little frothy, containing some pus cells, and on culture, streptococci of hemolytic and nonhemolytic character, and a few stapyhlococci and pneumococci. Cultures, which have frequently been made, are not concordant; sometimes one type predominates, and sometimes another.

X-ray examination of the chest shows the heart and aorta to be normal, and the movements of the diaphragm equal on both sides. There is marked intensification of the hilus shadows; otherwise, nothing.

Pathology and Pathogenesis. The pathologic lesion is a bronchopneumonic inflammation of lobar distribution. Its general behavior indicates that it is due to infection with an organism of low virulence. It may seem strange to speak of bronchopneumonia as a unilateral and lobar process, but the recent influenza outbreak has taught us that such a pathologic condition may occur; indeed, it was extremely common in 1918. In the absence of autopsies, I am not able to describe the histologic picture; but I doubt very much whether it differs materially, if at all, from that seen in influenza, which I need not detail here.

As to the origin of the disease, the probabilities are that the cause of acute grippe-like colds and the cause of influenzal respiratory disease is also the cause of this special form of inflammation. One rarely finds, in diseases of the lung of long standing, only a single type of organism —owing, probably, to the free access of air to the lung. Hence, it is that in unilateral bronchopneumonia, two or more types of bacteria are usually found in the sputum—chiefly the influenza bacillus and the pneumococcus. Miller,[6] in a study of twenty-one cases, found the pneumococcus, type IV, predominating in ten; the influenza bacillus, in eight; and the streptococcus viridans, in three. In three cases of the series in which pneumococcus type IV predominated on the first examination, the opportunity was offered for later cultures during a subsequent recurrence. In one of these, pneumococcus type IV was again obtained; in another, pneumococcus type II B, in practically pure culture; and in the third, the sputum during the second attack showed influenza bacilli in marked predominance. In many of the cultures, comparatively few colonies of other organisms were present, such as stapyhlococcus aureus and streptococcus mucosus.[7]

The true status of the influenza bacillus is not yet established, but it seems to me that it is either the cause of influenza or closely allied with it.[8]

We may, I think, consider that unilateral bronchopneumonia represents a special form of subacute or chronic influenza. It appears to be more frequent as a sporadic affection than as a sequela of epidemic influenza. This statement, however, is somewhat subject to revision, for no one can say at this date, three years after the epidemic, that the clinical picture of influenza is a closed chapter. It is possible that these subacute and chronic cases constitute true influenza carriers.

Differential Diagnosis. Tuberculosis and typhoid fever are the diagnoses that are most frequently made erroneously in cases of the condition herein described; tuberculosis, for the reasons already given; and typhoid, on account of the long-continued fever and the slight cough. A correct diagnosis depends primarily on a routine physical examination of the lower lobe of the lung posteriorly, which is complete only if the patient is stripped to the waist. One cannot perceive the signs satisfactorily through the clothing. This is a point upon which too much emphasis cannot be laid.

Tuberculosis is *a priori* unlikely if the lesion is limited to one base; but, in view of the fact that this disease sometimes localizes itself there, repeated sputum and x-ray examinations should be made.

Pleurisy as a primary infection may be ruled out by a careful study of the physical signs; bronchiectasis and pulmonary abscess, by the physical signs and the use of the roentgen ray; the presence of a foreign body, by the history and the roentgenological examination. The rarer forms of pulmonary disease that may attack the base, such as syphilis, actinomycosis, sporothricosis, streptothricosis, oidiomycosis, etc., are to be thought of in atypical cases. Sometimes, by merely thinking of these unusual possibilities, one may achieve the correct diagnosis, and if not, it is possible to "follow through" by making the necessary tests.

Treatment. The treatment of unilateral nontuberculous bronchopneumonia is purely symptomatic. A simple sedative may be used if the cough is troublesome. It is not necessary, as a general thing, for the patient to go to bed; but he should not unduly expose himself, should remain away from work and, by proper hygienic measures, should steadily increase his resistance. I have seen benefit derived from a change of climate, especially from a sojourn in the mountains.

In a patient now under my observation, a physician, a vaccine made from his sputum has seemed to cause the temperature to subside to normal and to lessen the cough, although it has made little change, as yet, in the physical signs.

Complete recovery may be promised in virtually all cases in young persons. In older individuals, the condition may drag on for years without much change in either the physical signs or the general health. There is no breaking down and no cavitation, as in chronic pulmonary tuberculosis.

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1. Am. Jour. Med. Sci., 1913, cxlvi, 313; Trans. Ass'n. Am. Phys., Vol. xxviii, 1913, p. 430.

2. Larrabee: Boston Med. and Surg. Journ., 1915, clii, 257; Miller: Am. Journ. Med. Sci., Dec., 1917, p. 805.

Ash, Jour. Am. Med. Asso., Jan. 2, 1915, and McCrae and Funk have also called attention to nontuberculous lung affections of a chronic character but not identical in type with that here described.

3. Deut. Med. Woch., March 10, 1921.

4. J. A. M. A., June 11, 1921, p. 1647.

5. Loc. Cit.

6. Loc. Cit.

7. Greely and Brereton (Jour. Lab. and Clin. Med., April, 1921) report upon the bacteriology of thirty-one cases of chronic nontuberculous lung disease, of a type somewhat different from that here described. They found Penicillium glaucum, Mucor corymbifer and Aspergillus fumigatus. They call attention to the extreme pleomorphism of certain fungi, which may resemble yeasts, cocci and bacilli.

8. The importance of the influenza bacillus in chronic nontuberculous lung infections was pointed out by F. T. Lord (Boston Med. and Surg. Jour., 1905, clii, 537-574) and, more recently, by Garvin, Lyall and Morita (Am. Review of Tuberculosis, 1917, I. 16). Garvin, Lyall and Morita's cases are of a rather different type from those with which I am dealing. In my own cases, the physical signs were definite and unmistakable—often more pronounced than the patient's complaints led me to expect. Their patients were older than mine as a rule, and the lesion was not so definitely lobar as in the cases here considered.

Packard (Jour. Am. Med. Assn., Dec. 4, 1920, p. 1537), has written an interesting paper on nontuberculous lung changes following pneumonia and recalls the fact that there was a marked increase in the mortality from respiratory diseases, as shown by insurance statistics, after the influenza epidemic of 1891.

DISCUSSION

ON PAPERS OF DRS. PIERSOL AND RIESMAN

Dr. Charles H. Miner (Wilkes-Barre): I am sure we all agree with Dr. Piersol that the types of pneumonia and other respiratory infections have been very much altered by the influenza epidemic. We seldom see as many cases of typical lobar pneumonia. We do see a large number of respiratory infections resembling bronchitis, and now know that a large number of these are really cases of bronchopneumonia; and I have found that the diagnosis of tuberculosis has been made much more difficult by these obscure cases of bronchopneumonia, of which Dr. Piersol has spoken.

Dr. Piersol is certainly right in claiming that many so-called unresolved pneumonias are really empyemas or lung abscesses. Empyema should be suspected whenever in the course of a pneumonia there is a change in the patient's condition with the appearance of a paroxysmal, nonproductive cough, chills, sweats, and a more remittent type of fever.

The empyema nearly always develops after the crisis, i. e., during convalescence. In spite of the purulent pleuritis the patient usually shows considerable improvement following the crisis. The fluid develops gradually and is at first thin and slightly cloudy, but soon becomes typical thick, creamy pus. The physical signs may permit one to localize the purulent accumulation, but in interlobar or other encapsulated forms the diagnosis is often difficult. Exploratory puncture should be resorted to early. In general we aspirate over an area of marked dulness, but it is surprising how often a dry tap is obtained. If this first aspiration is unproductive, it is well to remember the frequency of axillary effusions and insert the needle in the anterior or posterior axillary line. With one puncture the needle may be pushed either anteriorly, or posteriorly, or up or down, for a variable distance and usually pus will be found.

Delayed resolution does occur in some cases, but this diagnosis should never be made until every effort has been put forth conclusively to rule out the possibility of an empyema or a turberculous pneumonia. Tuberculosis is frequently a factor in delayed resolution where there has been a previous tubercular infection.

Acute tubercular pneumonia often manifests itself with a chill, pain, cough, and signs of consolidation, usually in one of the upper lobes. In some instances it is impossible, for a week or more, to distinguish it from lobar pneumonia. At the end of ten days or two weeks the temperature changes from the continuous to the remittent or intermittent type and sputum becomes purulent in type. In every case of protracted pneumonia the sputum should be examined for tubercle bacilli.

A lung abscess is more frequently found in the postmortem room than at the bedside. The diagnosis is rarely made prior to or in the absence of the sudden expectoration of a large quantity of purulent sputum. This constitutes the characteristic feature of pulmonary abscess and from this one symptom the diagnosis can be made with almost absolute certainty.

Dr. Henry R. M. Landis (Philadelphia): This group of cases to which Dr. Riesman has called attention forms a very important one in individuals suffering from respiratory distress. I venture to say that, of the cases sent to the tuberculosis sanatoria, ninety per cent of the mistakes in diagnosis are constituted by this particular group. These individuals have marked respiratory symptoms, and on physical examination are found to have these gross changes, usually at the base of one or the other lung. Inasmuch as they often have blood-streaked sputum, a cough, and marked physical signs, the diagnosis of tuberculosis is made. If you draw a line through the mid-chest, everything below that line, in the majority of instances, is nontuberculous. When it comes to the apices, the trouble may or may not be tuberculosis, with everything in favor of its being due to that particular infection.

Another point that I would emphasize, and one that has been noted by everyone who has studied these cases, is the fact that even when the physical signs are marked, the roentgenogram either shows nothing, or the information is so slight that you can draw no definite conclusion.

A sign that is quite constantly present in these cases is fixation of the diaphragm, or only a very slight movement of the leaflet in the affected side. This is probably one of the factors that tend to prolong the trouble and make the patients subject to recurrent colds. I have in mind a case, in which fixation of the diaphragm has been present for fifteen years. Every winter he has a cold, which an ordinary individual would throw off in a short time, but with him, it may take two or three months. I imagine the reason for this is that this badly ventilated portion of the lung, due to fixation of the diaphragm, clears up with great difficulty. I am also of the belief that this accounts for the fact that some of these persons are often benefited by a change of climate, i. e., if they are sent to some places where there is relative freedom from dust, and where the chances of acquiring these acute respiratory infections are lessened.

Most of the cases that I see are of the chronic, rather than the acute type. A large number are seen at the Phipps Institute and the White Haven Sanatorium every year. You cannot tell how long the condition has been present. All you know is that there are these marked changes in the lung and that the patient has these symptoms, but you cannot tell what the primary trouble was. I should not be surprised if most of the supposedly subacute cases were of the chronic, latent type that comes under observation during an acute exacerbation. The essential thing to bear in mind about these cases is the fact that they are practically never tuberculous; and an interesting thing is to determine, if possible, what causes them.

Dr. Thomas G. Simonton (Pittsburgh): I wish to speak of one kind of case that has come under my care—unresolved pneumonia in syphilitic subjects. I have had three cases of this sort within the last year, in which persistent temperature was one of the features. It ran for three weeks, and with the fluoroscope we were unable to determine the presence of a collection of pus or anything in the pleura itself. The points that impressed me were the marked consolidation, impairment of resonance, bronchial breathing and tendency to change in the character of the sputum. Sometimes it would be bloody; at times, rusty; and at others, light in character. It showed the pneumococcus, type IV, the staphylococcus and the streptococcus present. One important thing was the degree of involvement, with consolidation and very little cough. If these cases are routinely examined there may sometimes be found a four plus Wassermann. In these cases the temperature had persisted for three weeks, and with massive doses of mercury given by inunction, it was surprising how the temperature came down by lysis.

I think that there are some cases of unresolved pneumonia in which it is difficult to tell that we have a complication by a collection of pus or empyema, and are not able to prove them to be tuberculosis, but in which, if we look into the blood and get there a positive Wassermann, it will help to clear up quite a number of these cases of unresolved pneumonia.

Dr. L. Napoleon Boston (Philadelphia): With reference to Dr. Riesman's paper, I rise to say that a few of these cases have fallen into my care, and I will cite only those in young subjects, because four of such have apparently recovered.

The first was a woman of nineteen years, who came on account of expectorating blood. I found, at the base of the left lung, an area of slight impairment on percussion, and a number of fine râles. She weighed one hundred and sixty, and was perfectly nourished. She continued to expectorate a little blood in the morning for seven or eight weeks. I placed her under treatment and she has completely recovered. The x-ray in this case showed what Dr. Landis brought out so clearly—no evidence of disease. Now the râles have disappeared. A period of three years has passed but there is still some impairment on percussion over the area.

The next case was in a woman of twenty-eight, who came for the same cause. It has been two years since I saw her. She has practically recovered, and is able to attend to her work as a bookkeeper. I think that the time during which she expecorated a slight amount of blood was two or three weeks. She presented the signs mentioned by Dr. Riesman and emphasized by Dr. Landis.

The third patient is a man whom I have been treating for a year. He has had the condition for six or seven years. He is fond of horseback riding, and after a long ride he expectorates some blood. I have examined the sputum several days in succession, at different times, and have never been able to find tubercle bacilli.

Another case occurred in a woman at the age of twenty-two. She had practically the same symptoms, and a lesion at the base of the left lung. She was relieved and, at the end of two years, married. While nursing her ten-month's-old child, she returned to me with a history of bloody sputum. Physical signs have always been present, including numerous râles, but no tubercle bacilli. She is better, but still has the râles.

In none of these cases was it possible to discover the cause.

Dr. Piersol (in closing): A question of importance is the possible cause of unresolved pneumonia. It has long been known that delayed resolution occurs chiefly in those who are debiliated and are suffering from chronic visceral diseases and infections. For that reason, I was glad to hear Dr. Simonton speak of syphilis in this connection. Head and Seabloom observed three cases of delayed resolution in luetic soldiers at Camp Wheeler. These cases promptly cleared up under the use of arsphenamine. The question naturally arises whether some cases of so-called pulmonary syphilis may not, in reality, be only instances of unresolved pneumonia occurring in syphilitic subjects.

Focal infection bears an interesting relation to unresolved pneumonia. Dr. Riesman and Dr. Alexander Miller, some years ago, independently described cases of unresolved pneumonia that did not clear up until focal infections in the upper respiratory passages were eliminated. The question of unresolved pneumonia cannot be solved until we know something more definite about the cause of resolution in pneumonia under ordinary conditions.

Dr. Riesman (in closing): With regard to the subject of unresolved pneumonia, I should like to say that in two or three cases that have come under my observation, the failure to resolve was due to acute endocarditis or an acute pericarditis. In one case of typical ether pneumonia of lobar distribution, the resolution did not take place. Eventually, perhaps two months later, and after many attempts, tubercle bacilli were found in the sputum.

Dr. Landis referred to fixation of the diaphragm, a symptom of great importance. However, in one case which has been under my observation for ten years, the diaphragm is movable. Dr. Landis is right in his belief that acute cases are often exacerbations of long-standing chronic states.

DISEASED CONDITIONS OF BONES AND JOINTS AS INFLUENCED BY MENSTRUATION*

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The recording and reporting of carefully observed facts concerning disease in its various manifestations are as essential to the understanding of these conditions and frequently of greater importance in the treatment and cure, especially from the standpoint of the patient, than the learned and scientific discussions of nebulous theories and hypotheses, with which many journals and society programs are filled to-day, and this is the excuse for the presentation of the following paper.

That normal physiologic processes may profoundly influence, either for better or for worse, the course of a disease, has long been recognized. In fact, it is through the action of normal physiologic processes that disease is in many cases eliminated. In certain instances, however, observation and experience show that an adverse influence may be exerted upon the condition, and we wish to record several cases illustrative of this, which have occurred within recent years.

Case No. 1. Miss R——, aged 21, suffered for 9 or 10 years from a tubercular process in her hip. This was treated for more than a year for some other condition before its true nature was recognized. Fixation was then employed and all function was eliminated and the case carefully watched. The first menstrual period occurred at about the fifteenth year, and gradually this function was established satisfactorily. At the seventeenth year, an abscess developed about the hip and pointed on the antero-external surface of the thigh near the great trochanter. This was watched carefully for several months, but it was finally found necessary to aspirate the contents. The puncture wound closed immediately and remained closed for one month, and then, rather suddenly, pointed and opened. It discharged typical tubercular pus for a period of three months, and then closed while the patient was residing at the seashore and going into the ocean every day, as well as using heliotherapy to the part. This sinus remained closed for a period of two months, and during a menstrual period, it suddenly became painful and very greatly swollen, and, on being punctured, there escaped about four ounces of bloody fluid, which had only the slightest evidence of any purulent content. This drained for about five days, and closed within three days after the cessation of the menstrual flow. This was repeated at two or three subsequent periods. The patient's health continued to improve steadily and the adverse influence of the menstrual impulse ceased to be felt in the affected part, and since that time, there has been no further evidence of any ill effects during these periods.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

Case No. 2. Mrs. P——, aged 42, suffered for many years from a pain in the outer side of her left thigh and in the front of her knee. This had gradually increased to the point where something had to be done to relieve the condition. Examination showed that there was present a rather marked increase in the size and consistency of the pad of fat underneath the ligamentum patellæ, and the removal of this mass was advised. This was easily accomplished and the part held fixed for several weeks, and function was gradually restored. Pain returned about the knee and the thigh, and has continued for a period of six months. It is so severe that the patient is at times unable to go up and down stairs, except by making the right leg do all the work. In this case also, there is a rather marked exaggeration of the symptoms at the time of the menstrual flow, the increase of pain coming on just before the establishment of the flow, and lasting until this has ceased. Further careful investigation of this case shows an anatomic lesion in the lower part of her spine, which is probably a factor in causing the pain in the thigh and possibly also in the knee, as these appear to be more of the character of a chronic neuritis than anything else. Here again there has been a marked disturbing effect upon the local condition by the menstrual impulse.

Case No. 3. In June, 1916, Mrs. R—— was sent to me by her family physician on account of pain and trouble in her left knee. She was 33 years of age, well developed, perfectly normal and healthy in all other respects, and was the mother of six children. The trouble in the knee had existed for seven to eight years and there was no history of injury or of any factor that might have caused this condition to develop. Examination showed the knee to be considerably enlarged and to contain fluid. There was also marked thickening of the synovial sac on both sides and above, and also considerable roughening of the synovial surfaces or hypertrophy of the synovial fringes. Thickened bodies could be felt on each side of the patella and they were apparently pedunculated. There was practically full range of function in the joint and the condition was disabling more by swelling and stiffness than by pain. The patient complained of some tenderness and gave the history that the symptoms were always more pronounced before and during menstruation. There was no evidence of trouble in any other joint and no cause could be assigned for this one. An x-ray made at this time showed slight thickening of the anterior edge of the external condyle, but no rarefaction of the bone nor evidence of any disease in the femur or tibia. A diagnosis of villous arthritis was made at this time with a special involvement of the ligamenta alariæ. An operation for the removal of the hypertrophied tissues was advised but refused. Local measures were used but without avail and the patient continued to go about on the foot, experiencing discomfort, mainly at the time of her monthly periods.

She again returned to me on the 1st of June, 1919. An examination showed the knee in much the same condition as it had been three years previously. She was not able to extend the leg completely, but could flex it to more than a right angle. The same history of exacerbation of the symptoms at the menstrual period was obtained but no importance attached to it. An x-ray examination showed the bones still to be normal but there was more marked thickening of the soft tissue about the joint. Operation was again advised and accepted, and on June 7, 1919, I opened the joint on the inner side of the patella. When the tissues were incised down to the synovial sac, no more than the ordinary amount of bleeding occurred. As the synovial sac was uncovered, a brownish tissue presented in the wound, looking exactly like the "coffee ground" coloring of the hemophiliac joint. Had the patient been a male, there would have been no doubt that we were dealing with a "bleeder." When the sac was incised, about ten (10) ounces of bloody serum escaped from the joint. When the incision was enlarged, the synovial membrane was found to be a uniform chocolate brown color and the parts outside of the articulating surfaces were covered with masses of hypertrophied villi. Just below the patella, there were numerous pedunculated bodies in the region of the ligamenta alariæ which were the typical "joint mice." These masses were removed, and the hypertrophied villi were destroyed as thoroughly as possible, though it was found necessary to open the joint on the outer side of the patella as well. The bleeding which followed the removal of this tissue was only moderate and ceased before the closure of the joint. The joint was closed by several layers of sutures, but a drainage tube was left in the upper cul-de-sac for 24 hours. The leg was placed on a moulded plaster splint and an ice bag was kept constantly applied for the next six days and recovery was uneventful.

I was greatly at a loss to explain the peculiar coloring (hemorrhagic) of the synovial membrane in the joint, until I suddenly recalled that the patient had ceased menstruating the day before the operation, and that the condition was always worse during that period. As soon as the patient recovered from the anesthetic, I questioned her regarding the swelling of the joint during the period of her pregnancies, and found that during these periods she had had no exacerbations of the trouble in the joint. This then proved the explanation of the hemorrhagic appearance of the joint. It was a case of villous arthitis complicated by vicarious menstruation.

Her subsequent history showed freedom from any joint swelling at the monthly periods for about nine months, and then after severe use in house cleaning and climbing of stairs, the swelling returned. This occurred twice and for two years there has been no recurrence.

Pathologic Report of Tissue Removed from Within the Knee. Specimen consisted of several pieces of tissue contained in a blood-stained fluid; the supernatant fluid was clear. Tissue varied from 0.75 to 2 cm. in diameter. One piece was soft and granular, while others were firm and fairly dense, and of a yellowish color which extended throughout the section.

Fixation. Alcoholic solution of corrosive sublimate; usual laboratory stains.

Histology. The tissue showed a rather large amount of fibrous tissue, between the fibrils of which were many cells. The fibrous tissue was old, rather dense and stained well. The tissue was very cellular, the cells being mostly mononuclear, either round or spindle-shaped. Many spaces appeared throughout the tissue; some were empty, others filled with cells, among which were giant cells. The latter contained from 2 to 6 nuclei and were centrally placed. This tissue was inflammatory, but there was no suggestion of tuberculosis; neither in the tissue, nor in the free fluid from the joint could any tubercle bacilli be found.

Diagnosis. Chronic inflammatory tissue.

In a search through the literature of vicarious menstruation, records were found during the past four centuries of menstruation through ulcers, scars, sinuses and injured areas. These sites may be located in almost any portion of the body, one being an ulcer on the cheek, another fissures of the lips, and another a scalp wound. Little attention appears to have been given by the old clinicians to this phenomenon, it being looked upon as rather a freak of feminine disposition, than as presenting any special features of interest to the surgeon, or as being explicable through physiological laws. Menstruation was for a long time considered to be the result of habit in the female, and was in no way connected with the secretions of the ductless glands. Though at the present time, the process of menstruation and its relation to endocrine secretions are not understood, it has been indubitably established that the thyroid, the pituitary and the adrenals exert a powerful influence upon the ovary and its secretions, in the establishment of menstruation. As a result of some unknown impulse, whether of hormones or of a cyclical character, there is a stimulation of the thyroid, pituitary, adrenals and ovary. This is followed by an increase in the amount of their secretion, which, in turn, acts upon the nerve, circulatory and glandular systems, resulting in increase in blood pressure of 5 to 10 millimeters, greatly increased activity of all the normal physiologic processes, and stimulation of practically every portion of the body, so that really a supernormal result obtains.

The secretions of the ovarian glands activate the generative organs and produce characteristic changes in the mucous membrane and all other structures. In addition to the local changes at this time, there is a rapid increase in the elimination of calcium from the blood which may or may not lower the resistance of already devitalized tissues to the increased vascular tension and congestion. The immediate manner of action of these stimuli upon susceptible parts is utterly unknown, and is a subject for investigation and discovery by the chemist and physiologist, and at the present time, of wild conjecture on the part of many writers. It is well known that certain of the endocrines exercise a selective action upon circulation, through their effect upon the vasoconstrictors or dilators, but in what manner this is effected is not known. Also, it is established that certain endocrines profoundly influence metabolism, but whether this is due to a chemical process or occurs through action upon the nerve system or circulatory system has not been determined, and we are again forced backward to the position where observation and record of phenomena serve as the actual basis of our knowledge in the treatment and care of many conditions. Certain it is, however, whatsoever may be the changes which occur during the process of menstruation, and however they may be produced, a diseased area in any portion of the body may be adversely affected by it, and the surgeon must be prepared to deal with whatever complication may arise at that time. It is undoubtedly good surgery to advise against, and refuse to undertake any surgical procedures of any degree of severity, immediately preceding or during the period of menstruation.

DISCUSSION

Dr. Edward A. Schumann (Philadelphia): This paper of Dr. Rugh's is exceedingly timely. All of us have undoubtedly been taught that menstruation is a contraindication for any surgical procedure, except when the patient is in peril of her life, but we are all prone to forget, or ignore, this fact, and time after time I have seen patients admitted to the hospital for an ordinary elective operation and operated upon, regardless of the incidence of menstruation, sometimes with most unfortunate results. This much may be said, that the menstrual function exercises a profound effect upon the entire organism of the individual affected. A profound depression is almost invariably present. In regard to the direct effect of menstruation upon joint disease there is, I think, but little in the literature which is definite. The work of Block upon the subject, in which he investigated tuberculosis in general in reference to menstruation, proved that the temperature rose during the menstrual period and for 24 to 48 hours following the flow, and Block went so far as to say that latent tuberculous processes might be so excited by the menstrual flow that a diagnosis by physical examination was possible at the time, when otherwise impossible. Whether this would apply to tuberculous joints I cannot say. The only other work that has been done upon the effect of menstruation upon joints that I can recall is that of Muller, who investigated a series of cases of arthritis and found that not only was the temperature of the infected joint increased during menstruation, but all the signs and symptoms of the arthritis were greatly aggravated. So far as I know this is the only literature on the relation of arthritis to menstruation now existent. Dr. Rugh's paper is exceedingly timely and I hope that it may stimulate us all to do more work along this interesting line.

A MESSAGE FROM THE HOMEOPATHIC MEDICAL SOCIETY OF PENNSYLVANIA*

CLARENCE BARTLETT, M.D.
PHILADELPHIA

Needless to say, the opportunity of appearing before you as a representative of the Homeopathic Medical Society of Pennsylvania, to present to you the best wishes of my colleagues, affords me more than ordinary pleasure. The incident is but part of the evidence of the good feeling now existing between the schools. Many, many years ago, your ancestors and mine quarreled, and over what?—just the mere question of the proper method of prescribing drugs, and so started the greatest medical schism of all times. After a century of combat, carried on with unexampled bitterness, more liberal counsels prevailed. Year after year we have grown more and more friendly, until at the present time a true spirit of comity exists between our separate organizations. This is the day of liberality. Should a great medical reformer appear before us at the present time, there can be no doubt concerning the respect with which his views would be received, and forthwith 250,000 English-speaking physicians would get busy to determine the correctness or otherwise of his observations.

Pennsylvania is to be congratulated upon its medical institutions, upon its colleges, its hospitals and its societies. We have within our borders five "Class A" medical schools, each and every one of which is doing the best of the kind of work for which it was brought into being, namely, the education of healers of the sick, and not the making of mere naturalists and scientists. Interesting as is the study of science and nature, the art of healing and the prevention of disease constitute the true calling of the physician.

Unfortunately the present day trend to the specialties has led to the failure of the public to realize the importance of the general practitioner, and of therapeutics as practiced by the medical profession. Too little is the difficulty attendant upon the art of prescribing realized. Before the physician can begin to consider questions of therapeusis, he must be well grounded in all the fundamental medical sciences, and moreover, he must understand the patient himself. A consideration of the disease apart from the patient, or of the patient apart from his disease, is not conducive to good results. The acquisition of the immense amount of knowledge thus demanded as a mere beginning is a task that can be accomplished only by a well ordered and well educated brain. It has been said that the requirements preliminary to the study of medicine are too high. How can we lessen them? For to any one who understands the problems of the medical educator and his students, it is plainly impossible to make good physicians unless the foundation is strong.

This brings me to the problem upon which pressure is brought against us at the present time, namely, that of letting down the bars, so that men of inferior educational attainments may practice within our commonwealth. Working with your president, Dr. Henry D. Jump, and his colleagues on the Medical Legislative Conference, we early determined that the importance of the education and training of the physician was the fundamental question in medical education and licensure. If a man does not understand his anatomy, physiology, chemistry, pathology, surgery, diagnosis, hygiene, to say nothing of numerous other subjects, he is worthless as a medical adviser. It is easy enough to talk about applying drugs and other measures to the treatment of disease, without knowing much of either, but it is mere talk, because disease and patients cannot be treated properly unless thoroughly understood by the practitioner. No problem is impossible of solution until all the premises entering therein are known.

The fallacy of compulsory health insurance was readily demonstrated by the Conference in its presentation of the facts bearing upon it to the Governor's Commission. When the gentlemen constituting that body were made to realize that compulsory health insurance meant medical work by the quantity and not medical work according to 1921 quality, the scheme lost the support of all of its reasonable adherents, its sole remaining friends being those who refused to be convinced.

Mere haphazard prescribing, in other words crass empiricism, is never sound practice. The action of drugs upon the healthy human body must be known as the foundation for their application to disease and to the cure of the patient. Such application must always be made upon a sound rational basis. This subject has received altogether too little attention from the profession, as evidenced by the scant attendance at the materia medica sections of society meetings, amounting to probably less than one per cent of the entire registration on some occasions; for example, twenty-five out of nearly four thousand at New Orleans. Let us relieve ourselves of the charge of therapeutic nihilism; let us become therapeutic optimists; let us devote ourselves to the art of healing as the summun bonum of the physician's education, and may the best man win.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

THE MEDICAL LEGISLATIVE CONFERENCE*

E. A. KRUSEN, M.D.

NORRISTOWN

As a representative of the Medical Legislative Conference of Pennsylvania, I have been asked to say just a few words about the work that has been accomplished the past season at Harrisburg.

A year ago one of the most important questions was that of compulsory health insurance. The Commission which had been appointed by our Governor to investigate this subject did its work thoroughly and with unbiased judgment. Your representatives in the Medical Conference were invited by the Commission to attend its meetings and all of these invitations were accepted. We were ably assisted by the resolutions from all the local medical societies and other associations in Pennsylvania, opposing compulsory health insurance, and the Commission, after reviewing all the evidence presented, rendered what we believe to be a sane and far-reaching decision by handing to the legislature, on April 18th, a negative report, with a request for dismissal. We feel that by this alone your Conference has been a factor in helping to stifle the passage of a bill that, from our viewpoint, would have placed a law on the statute books of Pennsylvania that would have been the first step in pauperizing the small wage earners of the state, as well as in prostituting the medical profession.

The work of the Conference was led by Dr. G. A. Knowles, who spared neither time nor energy in looking after all legislative matters. In this he was ably assisted by all the members of the Conference, backed up by the presidents of the state medical societies of all schools.

During the past winter several bulletins were sent out from the office of the PENNSYLVANIA MEDICAL JOURNAL, giving the readers an opportunity to see at a glance the bills before the legislature affecting the medical profession. The bills were all carefully scrutinized, the important parts condensed and an opinion given as to their merit.

As to the financial part of the program, the expense of the Conference has been met by contributions from the medical fraternity, some of them responding liberally. Some local societies assessed each one of their members five dollars for legislative purposes. Perhaps a half dozen societies in the state did this. Of course a large number, while receiving equal benefit, have overlooked a subscription of any amount.

Let every member of the medical profession remember that he has a duty to perform in the political world. Take an active part in supporting men as your representatives who are of known ability and integrity and who are through and through American.

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*Abstract of article read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

SELECTIONS

FALLACY AND SYPHILIS

P. S. PELOUZE, M.D.

PHILADELPHIA

In the study of a number of cases of syphilis one is struck by the fact that there are few diseases in which general fallacy is exercising a more disastrous effect. That many of these fallacies are rather widely spread through the medical profession and are not alone confined to those who see but little syphilis is easily shown by a study of hospital histories. One is often shocked by the apparent beliefs or, possibly, lapses of men who see large numbers of syphilitics. Just why such ideas get and keep such a firm hold in the minds of so many physicians is hard to tell, but the fact remains that probably no class of patients has suffered more from professional fads and fancies than those with lues. Year after year we see great strides in our general knowledge of this disease, but unfortunately many of the older ideas cling long after they are proved to be erroneous. Wherefore, there is a crying need not only for a frequent "stock-taking" but for a wide dissemination of the knowledge thus obtained. It is by such methods alone that we shall be able to play fairly with the public and lift ourselves above otherwise inevitable criticism.

By a dark field study of chancre serum, the existence of syphilis can be determined when our chances of "cure" are admittedly best. This fact has been known for years, but it is astonishing how often the old method of waiting for secondary symptoms is followed. Such a procedure in the light of our present knowledge is, to say the least, criminal neglect, and yet a large syphilis clinic shows that there are very few initial lesions upon which some strong antiseptic has not been used by a physician or druggist without any effort to determine the nature of the sore. Even McDonagh, in his new book, states that he determines the character of penile sores by their clinical characteristics. How one can feel such confidence in his "hunches," when all the rest of us have been deceived so grossly and so often, is beyond comprehension.

If there is one dream more positively dead, than that any certain number of doses of arsphenamine will cure lues, I do not know what it is; and yet, even to-day, it is not a rare thing to hear a patient say that his doctor promised him a positive cure after three or four doses. Of course, the commercial instinct, which we are sure to find in spots, may account for a few such instances, but I believe on most occasions the physician in question really has faith in his ability to effect such a cure.

That one or two negative blood tests following a course of treatment indicate a cure, is another belief that has long since been proved false, but a very large percentage of chronic, incurable luetics have fallen victims to it. I have stood in a dispensary and heard men who should know better say, "Your blood is all right now," and on his first negative test, send a patient out into a "fool's paradise." I am treating patients to-day to whom this sorry verdict was given, and I am treating wives and sweethearts infected by these same patients after they have been assured that a cure had been effected.

It is not a fact that one or six consecutively negative Wassermann tests in a patient, with or without a definite luetic history, give absolute proof that syphilis is not present; but how many physicians believe it? Most of us have heard learned clinicians cross syphilis out of their study of a case because of one negative test. So commonly is this done before medical students that it becomes an almost fixed belief with them that a negative indicates no syphilis. The records of every syphilis clinic will show case after case that presented negative tests over periods varying from weeks to years, only to become strongly positive again.

Not long ago I saw a patient upon whom six surgeons had made a diagnosis of tuberculosis of the epididymis on the strength of his statement that he had had six negative blood tests in the preceding five years. Two consecutive tests that I had made were strongly positive, and three injections of neoarsphenamine cleared up the epididymal nodules. His infection dated from fourteen years before and had been treated with oral mercury for a year and a half. Six years after, he had married and was the father of two apparently healthy children.

Not only should caution be exercised against pronouncing a patient cured when his Wassermann test is negative, but also extreme care should be taken not to make a diagnosis of lues upon the strength of one positive test, unless there are obvious symptoms of the disease. So-called "false positives" are not altogether rare, and I have seen five or six cases wherein either this or a laboratory error has led the physician into pronouncing the patient luetic, when such was not the case. Certainly we should require at least two positive reports before even hinting to a patient with no history or other evidence of lues, that he has syphilis. To give a nonsyphilitic the idea that he has lues causes a "mental scar" that it is often impossible to eradicate.

One does not have to possess far vision to see that the present trend of medical thought is toward the abandonment of our former optimism in regard to the cure of syphilis. Possibly the world would be more greatly benefited if we were to swing, for a time, as far over to the side of pessimism as we once did toward that of optimism. Further, there is accumulating evidence to suggest that the word "cure" may be somewhat of a misnomer and that, perhaps, we at our best accomplish for the luetic only what we have for years known that we did the tuberculous, namely, that we merely "heal him in." Time alone can answer this question but until it does, the crying need is that we be frank with both our patients and ourselves. It is not fair that we view too lightly a disease of such far-reaching importance, for such an attitude has brought about the sad misfortune of too little treatment. It is safe to say that where one patient has suffered from too much treatment, thousands have suffered from too little.

Little, if any, harm is done by letting the patient know the importance of the disease that he has, and it is only by so doing that his best cooperation can be gained and treatment carried on for any period of time. It is not an uncommon thing to find a patient who has not realized the importance of his disease until symptoms have recurred after a long freedom from treatment. In many cases this is only after irreparable damage has been done to his vascular system or other vital structures. One should certainly not be an alarmist, in so far as the patient is concerned, but merely frank and straightforward. Nor should too much attention be centered upon the serological studies. I am in the habit of stating frankly to those patients who have had a negative for a long time, that, in view of the fact that we have no way of positively determining a cure, it would be best to play safe by taking from two to three courses of mercury a year for some time. Such a procedure is possibly open to criticism for the psychic effect it may have, but I have yet to see it do any harm and, from our present knowledge, it is certainly defensible.

One thing that we should all bear in mind is the danger to humanity at large of a fixed fee for the administration of arsphenamine. Patients should pay well for such service, but no plan of treatment of lues is likely to be eminently successful that does not take into account the patient's ability to meet the financial burden over a sufficient period of time.

Lest we forget that the "cure" of lues is not always the rosy dream that the claims of the various manufacturers of arsenical preparations would lead us to believe, it may be of value to publish a few notable exceptions. The following skeletal records are taken from dispensary cases not under care of one individual, and are selected as the more characteristic of many in my possession, to demonstrate the falsity of many lingering beliefs. Many of them show the handicaps encountered in the average course of treatment in which the patient's visits are dictated by his interest or his pocketbook. They show how erratic and unreliable the Wassermann test is as a proof of cure.

It will be seen that, in some cases, treatments seem to have changed a negative to a positive and that periods of rest have changed positives to negatives. A study of the original records shows active lesions present when the blood was negative and, in fact, in the several hundreds of these records that I have had copied, one could find proof of almost any contention he could wish to put forward. It should be said, however, that the greater number give a far better picture from a serological standpoint than do these few. As regards the disappearance of symptoms and the maintenance of workable health, the entire group is generally good. All the cases were under more or less intensive mercurial treatment, generally orally administered, during these periods. The German, French and two American (Dermatological Research Laboratory and Metz) arsenicals were used from time to time, but it is not possible to show that one was much more potent than another.

Case *A* is of particular interest, in that he was started upon very intensive arsphenamine and mercury treatment in the A. E. F. before any secondary signs other than a positive blood test had appeared. He was pronounced cured and had his blood tested through curiosity alone.

Case *F* is of interest because he had had in all, seventy-seven injections of some form of arsenical without a single negative test. His first negative came after the cessation of all treatment and it has remained negative under the same conditions.

Case A.
Chancre of lip.
May, 1918, U. S. Army.

Date.	*Ars.*	*Wass.*
1918		
June 18		xx
June 25		xx
	A	
	A	
	A	
	A	
	A	
1 mo.		Neg.
	A	
	A	
	A	
	A	
	A	
1 mo.		Neg.
	A	
	A	
	A	
	A	
	A	
1 mo.		
	A	
	A	
	A	
	A	
	A	
1 mo.		Neg.
	A	
	A	
1919		
May		Neg.
October		Neg.
1920		
Feb. 17		xxxx
Feb. 20		xxxx

Case B.
Old case.
No arsenic. Oral Hg.

Date.	*Ars.*	*Wass.*
1911		
May 1		Sore
1912		
Jan. 19		xx
June 3		Neg.
1913		
April 1		x
Sept. 23		xx
Nov. 18		Neg.

Case C.
Old case.
Chancre, 1907.

Date.	*Ars.*	*Wass.*
1913		
March 4	A	
March 31		x
1914		
Dec. 20		xxxx
1916		
April 1		xx
Oct. 28		Neg.
1917		
April 28	A	
May 19	A	
July 21		Neg.
1918		
Jan. 5		xxxx
March 2	A	
March 23	A	
March 30	A	
April 6	A	
April 20	A	
May 18	A	
May 25	A	
June 22		Neg.
Oct. 30		xx
1919		
March 1		xxxx
June 21		x

Case D.
Chancre, 1916.

Date.	*Ars.*	*Wass.*
1916		xx
1917		
March 20	A	
April 10	A	
May 21	A	
June 7	A	
June 22	A	
July 17	A	
Aug. 13	A	
Sept. 7	A	
Sept. 10	A	Neg.
Nov. 13		Neg.
1918		
Jan. 18		xxx
Jan. 23		x
March 13	A	
April 3	A	
May 4	A	
May 29	A	
July 3	A	
July 31	A	
Aug. 28		Neg.

Case E.
Chancre, 1913.

Date.	*Ars.*	*Wass.*
1913		
March 20		xxxx
1914		
Feb. 28	A	
June 6		Neg.
Sept. 9		Neg.
1915		
March 26		Neg.
1916		
Feb. 16		xxxx
Feb. 24		xxxx

Case F.
Chancre, 1909.
Hg. to 1913.

Date.	*Ars.*	*Wass.*
1913		
May	A	xxxx
1915		
June 30	A	
July 14	A	
July 28	A	
Aug. 1	A	
Aug. 25	A	
Sept. 9		x
Sept. 22	A	
Oct. 6	A	
Oct. 20	A	
Nov. 3	A	
Nov. 13		xxxx
Dec. 1	A	
Dec. 15	A	
Dec. 29	A	
1916		
Jan. 2	A	
Feb. 2	A	
Feb. 23		xx
March 15	A	
March 22	A	
March 29	A	
April 12	A	
April 26	A	
May 13	A	
May 17	A	
June 6	A	xx
June 29	A	
July 12	A	
Aug. 2	A	
Aug. 23	A	
Sept. 6	A	
Sept. 27	A	
Oct. 24	A	
Nov. 14	A	
Dec. 5	A	
Dec. 26	A	
1917		
Jan. 1	A	
Jan. 31	A	
Feb. 14	A	
Feb. 25	A	
March 14	A	
March 28	A	
April 11	A	
May 2	A	
May 6		xx
July 6		xx
July 18	A	
Aug. 1	A	
Aug. 10	A	
Aug. 22	A	
Sept. 18	A	
Oct. 18	A	
Dec. 5	A	
Dec. 19	A	
1918		
Jan. 2	A	
Jan. 16	A	
Jan. 26	A	
Feb. 20	A	
March 6	A	x
March 20	A	
May 2	A	
June 1	A	
Aug. 14	A	
Sept. 4	A	
Sept. 14	A	
Sept. 21	A	
Dec. 14	A	
1919		
	A	
	A	
	A	
	A	
	A	
	A	
	A	
	A	
Oct. ?	A	xxxx
	A	
Nov. ?	A	
1920		
Feb. 16		x
All treatment stopped.		
May 10		Neg.
1921		
Jan. 11		Neg.

Case G.
Chancre, July, 1914.

Date.	*Ars.*	*Wass.*
	A	
1915		
March 20	A	xx
March 27	A	
May 8	A	
May 19	A	
June 26		x
July 14	A	
Oct. 6		xxx
Nov. 29		Neg.
Dec. 8	A	
1916		
Jan. 11		Neg.
Feb. 17		Neg.
April 5		Neg.
May 5		x
July 18		Neg.
Oct. 24	A	xxxx
Oct. 29		xxxx
Nov. 8	A	xxxx
Nov. 18		xxxx
Nov. 22	A	xxxx
Dec. 2	A	
Dec. 30		xxxx
1917		
Jan. 6	A	xxxx
Jan. 24	A	xxxx
Jan. 27	A	xxxx
Feb. 2	A	
March 3	A	
March 7	A	
March 28	A	
April 7	A	
May 5	A	
May 21	A	
June 9	A	
June 30	A	
July 21	A	xxxx
Oct. 6	A	
Oct. 27	A	
1918		
Feb. 13	A	
April 3	A	
April 7	A	xxxx
April 17	A	
May 1	A	
July 3	A	
Aug. 7	A	
Aug. 17	A	
Sept. 1	A	
Sept. 21	A	
Oct. 5	A	
Oct. 19	A	
Oct. 26	A	
Nov. 9	A	
Nov. 23	A	
Dec. 9	A	
Dec. 28	A	
1919		
Feb. 1	A	xxxx

Case H.
Old Case.

Date.	*Ars.*	*Wass.*
1918		
Sept. 14	A	
Sept. 21	A	
Sept. 28	A	
Oct. 19	A	
Oct. 25	A	
Dec. 28	A	
1919		
Jan. 4	A	x
Jan. 10		
Jan. 18	A	
Feb. 15	A	
Feb. 20	A	
March 1	A	
March 8	A	
March 15	A	
March 22	A	
March 28		xx
May 24	A	
May 31	A	
June 4	A	
June 21	A	
June 28	A	
July 9	A	Neg.
July 15	A	
July 22	A	
July 29	A	
Aug. 5	A	
Aug. 13		Neg.
Aug. 22	A	
Oct. 25	A	
Dec. 1		Neg.
1920		
Jan. 24	A	
Feb. 7	A	
Feb. 14	A	
Feb. 24	A	
March 2	A	
March 9	A	
March 16	A	
March 23	A	
March 30		xx
April 17		xx
April 24	A	
May 1	A	
May 8	A	
May 22	A	
May 29	A	
June 5		Neg.

1831 Chestnut Street.

A CASE OF CHRONIC JAUNDICE CURED BY A LATERAL ANASTOMOSIS OF THE COMMON BILE DUCT WITH THE STOMACH*

MOSES BEHREND, M.D.
PHILADELPHIA

In addition to the operations reported in the April, 1921, number of the PENNSYLVANIA MEDICAL JOURNAL for the relief of chronic jaundice the writer wishes to add another operation which will be of great service, especially where there is disease of the pancreas causing obstruction at the papilla of Vater to the passage of bile to the duodenum. The pancreas may be hard, as the result of a pancreatitis, or it may be the seat of some malignant or benign tumor.

The history of the case is as follows: The patient was referred by Dr. V. A. Loeb. Mrs. H., age 60, had been operated on for cholelithiasis five years ago at the Lankenau Hospital, when a cholecystectomy was performed. She was well until the early part of 1918, when she complained of pain similar to that of her former trouble. We operated on her May 25, 1918. At this time the pancreas was hard and firm, resembling the condition found in chronic pancreatitis. The common duct was drained by means of T tube for several months after leaving the hospital. She remained well until a few weeks before her last admission to the hospital, October, 1920. When admitted she was deeply jaundiced, due to some obstruction of the common duct. She had symptoms of Charcot fever and a peculiar mental hebetude which is present in many of these cases of common duct obstruction.

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*Read before the Philadelphia Clinical Association, May 3, 1921.

Operation was performed October 21, 1920. When the region of the foramen of Winslow was reached, the common duct was found much enlarged in diameter, occasioned by a very hard pancreas causing obstruction at the papilla of Vater. It was decided to perform an anastomosis of the common duct to the stomach or duodenum but on account of the previous operations the duodenum could not be brought in apposition to the common duct. The stomach was therefore selected, and an anastomosis was made between it and the common duct. (See Fig. and insert.) The peritoneal surfaces of the two structures were first united with linen thread. The common duct was then cut across its long axis and an incision was made in the stomach to correspond to the cut just made. The cut ends were then united as in any other anastomosis. No rubber tube was used in this case to maintain the opening. It is better if we can avoid the use of a rubber tube to make the passage of the bile permanent.

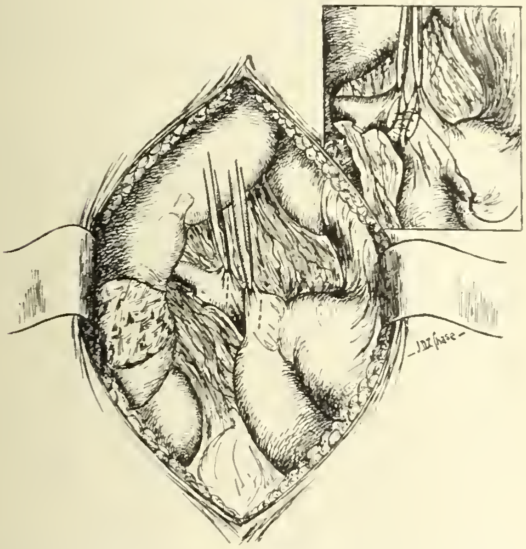

Illustration shows the common bile duct dilated as seen at operation. Lateral choledochogastrostomy. The anastomosis may also be made between the duct and the duodenum. The insert shows the suture completed on the peritoneal surfaces, the proximal cut ends have been sutured, the distal ends are sutured as in any other anastomosis.

The first twenty-four hours a large amount of bile was vomited. This proved conclusively that our anastomosis was successful. Within twenty-four hours there was a marked paling of the jaundice, the vomiting stopped after the first gastric lavage of sodium bicarbonate solution. In forty-eight hours the jaundice had almost disappeared, the yellowish conjunctiva being the last to clear up. At the end of two weeks no sign of jaundice remained.

The patient has obtained a perfect result. While she experiences a little indigestion at times, she is able to eat all kinds of food. She has gained in weight and is certainly in better spirits than she was before the operation.

My first fatal termination of a case of anastomosis of the bile passages to the hollow viscera occurred at the Mt. Sinai Hospital. In this case the jaundice had existed for several months. The patient had 5% of sugar and diacetic acid and acetone, a condition that I have found in many cases in which there was disease of the gall bladder passages. These pathological substances disappear in most cases after a successful operation. The papilla of Vater was not patulous and did not admit a fine probe. An anastomosis was made between the common duct and the duodenum and the gall bladder and the stomach.

Finally, it must be impressed on every one that these supposed hopeless cases of chronic jaundice may be much benefited and even cured. Every case should at least be given the benefit of exploratory operation to determine the cause of the jaundice and then application of the proper remedial measure.

1427 North Broad Street.

CO-OPERATION BETWEEN THE PHYSICIAN AND THE MINISTER*

REV. A. O. CALDWELL

WAVERLY, N. Y.

During the World War "liaison officers" were used to insure that troops speaking different languages and using different methods coöperated in reaching the same objectives. Some method must be devised to assure coöperation between the doctor and the minister. Professional duty calls upon both to go into the same sick rooms. The doctor who calls upon his patient is followed by the minister who calls on his parishioner. Each may either hinder and undo the work of the other or they may coöperate. The two professions, because of their very different background and training, speak a different language. They use different methods. But essentially their "objective," to keep the military figure, is the same. They both work under commission from the Master of Life who came that men might "have life and have it abundantly." The church labors to make men holy; the hospital to make men whole. It is the same task. We seek whole, rounded, harmonious life.

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*Paper read before the Bradford County Medical Society, July 12, 1921.

It is evident that there is very little coöperation to-day between the two professions. At best there is mutual respect, tolerance and sympathy, but no active coöperation. At worst there is suspicion and distrust. I have the impression that many doctors regard the visit of the preacher on a sick patient as a necessary nuisance from which no good may be expected and some harm is to be feared. It is significant, on the other hand, that when ministers get to talking about their relations with the physicians of their community, their chief boast is apt to be that they have never had any trouble or unpleasant experiences. In neither case is there any evidence that they have seen any need of coöperation. If each can go his own way without interference, both are entirely satisfied. That they might find in each other an ally and might plan their work together, never seems to occur to the average doctor or to the average minister. This lack of coöperation is not surprising. They are both men of strong, dominant, but entirely diverse types. The preacher depicted in the "movies" may not be the average preacher but he is typical. We do not need a label or even his long frock coat to recognize him. The actor of preacher parts in the "movie" is usually long, lank and lantern-jawed. His outstanding characteristic, however, is an ability to register shocked dismay. When you read in your newspaper the account of sermons in which the chief point is usually that the good man is horribly shocked over this or that deplorable evil, you realize that there is an element of truth in the movie depiction of the preacher. The Monday edition of the *New York Times* wrote up three sermons preached the previous day. One minister was shocked at the gore on the Frenchman's face in the Jersey City arena; another was shocked at the way the women dressed; a third was shocked at the amount of crime in the city. In short, three prominent representatives of the clerical profession put in their time trying to share with us their shocked dismay at *symptoms* of the moral disease of the day. Is it to be wondered at that doctors who every day treat symptoms, even the most repulsive, as symptoms and not as causes, should regard such men as quacks whose lamentations belong to yellow journalism, and never think of them as constructive forces in society? Or, again, is it to be wondered at that the doctor who is fighting with all the resources of his skill and science to save a man's life should be tempted to shove into the corner of the sick room men whose chief business seems to be to prepare patients to die?

The average doctor, on the other hand, may not be just as he is depicted in such a book as Lewis' "Main Street," but Dr. Kennicott is a typical and quite familiar figure. He works tremendously hard. He is out in all sorts of weather and at all times of night. He has no time and little use for the esthetics of life. He is touched with a bit of grossness and is apt to be materially minded. He is not given to self analysis and is apt to count it womanish if not neurasthenic. Therefore he is not sensitive to the mental states of others,—his wife or his patients. For all his devotion to his patients' needs and to his professional duty, he regards them as essentially finely organized animals. We all have known such Dr. Kennicotts.

It need not surprise us that two such diverse types of men should find it hard to understand each other or to coöperate. In most cases they solve the problem as the Jews and Samaritans solved theirs, by having no dealings with one another.

The fact of this lack of coöperation may be more evident than its results. And yet we need only open our eyes to see the result on the mass of men and women who are neither physicians nor clergymen. The result is not helpful to either profession. A typical result in an increasing number of cases is Christian Science. This modern cult has few friends and no allies in either profession. The doctor criticises the deplorable want of common sense in the "Science"; the minister is shocked at its departures from true Christianity. Christian Science despite its high claims is not a complete philosopy of life. It is fundamentally a protest movement. It is a protest against a one sided science of medicine that treats men as though they were entirely material, that forgets that man is essentially spirit and that surgeons' knives and doctors' bills cannot cure him even physically if his soul is sick. It is a protest against a one-sided theology that treats men as though they were disembodied spirits preparing to fly to heaven, that forgets that what man wants first of all is a complete, harmonious life here, and that no man is converted or made what God intended him to be until he is delivered from ills and aches, disease and fears.

It is of no use to denounce a protest movement. It will continue as long as the cause for protest continues. It serves a useful purpose. Fundamentally its protest is right. The Master of Life was both a healer of bodies and a saviour of souls. The lack of coöperation between two professions that minister to men's needs must cease. They must find each other.

We are a long way yet from working out any exact method of coöperation. The basis, however, for such coöperation is being rapidly laid. We are charting the undiscovered country that now divides but may soon unite the frontiers of the two disciplines, medicine and theology. Such a book as White's "Warfare of Science and Religion" belongs to the last century. Like many another such book it described what was about to pass away. The "warfare" has degenerated into a guerrilla warfare between preachers and doctors who have carried the Victorian attitude into the twentieth century. The mass of followers of science and religion have grounded arms and called a truce. Neither is defeated.

And now from both camps is coming work that will end in foes finding themselves allies. Particularly in the relations between the doctor and the minister the basis for coöperation is being laid in the many recent studies of abnormal psychology. Ministers may not give credence to all the theories that have been advanced, but such books as James' "Varieties of Religious Experience" and the more recent studies of the "Psychology of Religion" are preparing the way for the day when the minister will be scientifically trained in dealing with the abnormal and subnormal mind. Doctors have not accepted all the conclusions of Freud, Prince and Sidis, but they are increasingly aware that the real cause of disease cannot always be discovered by thermometers, stethoscopes and x-rays. We have seen the beginning of the new science of psychotherapy which invades the field of the doctor and the minister alike. In a large percentage of cases of real sickness, we are told, there is nothing physiologically wrong. Men need not potions nor operations, but to be "made to think right." Character as well as health is endangered by repressed, thwarted or distorted desires. They need not anathemas and threats of hell fire but reëducation and new inspiration. The practice, as well as the theory, of both the doctor and the minister will be increasingly modified by the new studies of psychology. They will find themselves closer together. The possibility of real coöperation will become increasingly clear.

Few of the students of psychology have studied religious beliefs except as phenomena often found in abnormal forms. A deeper study will lead, I am confident, to the recognition of the potency of religion as a health-bringing and sanity-making force. It deals, we often think, with the "soul," and some doctors do not know whether they or their patients have any. The soul is not a mysterious something hidden away inside us. It is not a pocket-piece to be saved till we get to heaven. The soul is ourselves. It is the real man stripped of the accident of the body. It is the self we must reach with our curative agencies if there is to be either health or character. Doctors must cease to disdain the help of the religious guides. Religion deals with fundamentals and reaches the real man. Psychotherapy proceeds on the theory that what many a "nervous" man and woman needs is to become openly aware of the hidden plague-spot in their subconscious. Before psychotherapy was ever heard of, we had the advice, "Guard well thy heart, for out of it are the issues of life," and "Confess your faults one to the other." By instinct or revelation, as you prefer to put it, ministers have long known and used the methods of the most modern departments of medicine. Family doctors will often find the best expert to call in in an obscure and obstinate case to be the family pastor. The ministers, however, in their turn must learn how to exercise their office aright. If the doctor must learn not to disdain the help of religion, ministers must learn not to be afraid to invoke the aid of faith in bringing health to body as well as soul.

The first step toward establishing such coöperation, let it be said in conclusion, must be taken by the doctors. The minister has been disciplined by hospital and sick room rules till he rarely presumes to take any other part in a case than that of a friend. If his help as a minister is to be given the doctor will have to invite and welcome his coöperation.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

LITHIASIS OF THE UPPER URINARY TRACT

DR. J. C. BURT

By the upper urinary tract is meant that portion comprising the kidneys and ureters. It is in these parts that the most serious pathology is found and most errors are made in diagnosis.

Many different views are held as to the etiology of calculus formation. Thus the subject of faulty drainage as seen in mobile kidneys and other obstructions to the urinary output, has been considered as a cause of calculus formation. Some have advocated the theory of intestinal stasis as an etiological factor, basing their belief on the question of altering the chemistry of the blood supply to the kidney and thereby placing the blame upon body elimination rather than intake. By still others, all calculus formation is supposed to be due to infection.

Opposed to these theories may be submitted the question of geographical distribution. Stone formation is extremely rare in the Scandinavian countries, while in definite districts in England, parts of Germany, in and about Moscow, India and certain parts of China, lithiasis is extremely common. Is it possible for the people of Scandinavia and of China to live such different physiological lives as to require one people to establish special hospitals for the care of a condition practically unheard of in Scandinavia? This rather leads one to consider intake as, at least a possible etiological factor.

An analysis of 53 cases of calculus in the upper tract shows 42 males to 11 females. This is not a true balance of sex distribution, as most females come under the eye of the gynecologist or general surgeon, while a vast majority of a urologist's work is with the male. Statistics, however, do show a slightly higher percentage in the male. Of the 53 cases, 39 calculi were found in the ureter alone, 10 in the kidney alone and 4 with stones in both kidney and ureter. There was but one case having a bilateral condition. Seven gave histories of previous involvement with relief either by operative measures or cystoscopic treatments.

Symptoms.—There are no classical symptoms of renal or ureteral calculi. The symptoms of pain of a paroxysmal type, radiating into the external genitalia, followed by hematuria are seen more often in conditions other than stone, but must be said to be suggestive of an attempt to expel a calculus. In considering the symptoms, pain is present in most cases in some degree. Roughly speaking, it may be said the larger the stone the less pain. The causes of pain are increased intrarenal pressure due to a blocking of the ureter and a spasm of the ureter, set up by too forcible contraction of the muscle coat.

Hematuria is almost invariably present if a diligent search is made. Pus may or may not be found, depending upon the question of infection. Disturbance in micturition is a very common symptom, varying in degree from a slight tendency toward frequency and burning, to a condition of strangury. These symptoms may be present singly or as a group and they are all found in much more common conditions than stone formation, consequently, the symptomatology is of value only in so far as it directs our attention to these parts.

Diagnosis.—The diagnosis in the final analysis rests with the x-ray examination. The percentage of error is estimated from 1 to 6%—the latter being much too high. In the hands of a competent radiographer, failure to find a stone is less than 2%, especially when the examination is augmented by the use of the x-ray catheter inserted to the kidney pelvis, thereby showing the exact course of the ureter and enabling one to exclude phleboliths and glands casting confusing shadows in the vicinity of the ureter.

Treatment.—Having localized a stone and decided upon its removal, two means are at our disposal: operative measures and manipulation by means of the cystoscope. Of the 53 cases referred to, 14 had stones in the kidney pelvis or at either pole, 9 have been operated upon, 4 passed by manipulation by the operating cystoscope and one refused operation. The vast majority of stones in the upper tract are small, ranging in size from a match head to that of a small lima bean, and as they enter the ureter, peristaltic movements by the muscular coat tend to move them down the ureter to the bladder. Assistance here will enable nature to expell these calculi, this being accomplished by means of the operating cystoscope through which the ureter is dilated and the ureteral meatus cut, if necessary, to allow passage into the bladder. It is quite remarkable to see the size of some stones passed. Of our series of 39 stones in the ureter, all but one have by perseverance been nursed along down the ureter, until they have entered the bladder and from there passed spontaneously. From time to time, the transit is checked up by x-ray examination.

After repeated efforts to dislodge have failed, operative procedures are indicated. These are pyelotomy, nephrotomy, nephrectomy. When possible the pelvis only has been opened and the stone removed. This procedure is comparatively simple and safe, not being attended with the danger of hemorrhage, as seen in either nephrotomy or nephrectomy. When the stone is too large to be removed by way of the pelvis or when situated in either pole, either one of the other operative measures must be employed. The choice involves the keenest judgment on the part of the operator and no hard and fast rules can be laid down. Conservation of kidney tissue is very commendable as attempted in nephrotomy, but it is not without danger of hemorrhage nor the disagreeable consequences due to possible fistula following.

An effort has been made to emphasize two points, namely: a plea for a more general and routine use of the x-ray in patients exhibiting urinary disturbance, and the aiding of nature by means of the cystoscope in the expulsion of calculi from the ureter. Not only is this essential from the standpoint of the operative risk, but also from the economic aspect.

PETRIFIED UTERINE MYOMA

DR. C. O. ANDERSON

Myoma of the uterus is unquestionably one of the most frequently encountered conditions in gynecology; with its clinical features and pathology it renders almost an everyday picture. Both clinicians and pathologists, however, often lose sight of the fact that there are still great opportunities in this field for further observations. The case reported in this paper is of great interest. This fibroid was under observation for 13 years, for the simple reason that patient refused operation. A splendid opportunity was thus given to observe what the outcome of this condition may become, and also some light is thrown on its pathology.

CASE REPORT. HOSPITAL NO. 9294

Patient, Mrs. X., age 55 years. Menstruation began at age 14; regular and normal. Married at 41 years; one pregnancy at age of 42 years. Aborted at 3½ months. Uterus, on examination prior to abortion, felt like a uterus bicornu. Following abortion diagnosis of uterine myoma was made and hysterectomy advised but patient refused operation. She entered the menapause at the age of 45 (three years after her condition of myoma had been discovered) without any untoward symptoms.

She was seen occasionally after this time but was not examined again until June 16, 1913, at which time she had a myoma the size of a large orange. The patient was again advised to have an operation but refused because she did not suffer any great distress or discomfort.

On April 17, 1915, the patient was seen for a slight vaginal discharge (this was mucous in character although the patient stated that several times she had noticed a slight trace of blood in the discharge). The examination at this time showed that the myoma had not changed in size. Hysterectomy was again advised and refused. Patient was again examined in 1918 and the cervix at this time looked congested but there was no erosion, no bloody discharge and no change in the uterine growth noticed. Hysterectomy again advised and refused.

The patient was again seen April 22, 1921. There had been no bleeding since the menopause in 1911 (except the slight trace of blood noted in 1915). Her chief complaint at this time was a dull aching pain in the pelvic region, a sensation of heaviness and pressure in the vagina and rectum, and constipation.

The patient finally consented to an operation, which was performed on May 23, 1921. One ovary, tube and the cervix were left behind. No lesion was found except the hard uterus. The patient made an uneventful recovery and was discharged from the hospital June 9, 1921.

PATHOLOGICAL REPORT

The specimen consists of the uterus with one tube and ovary. The uterus has lost its characteristic shape; it is round and very hard in consistency; it measures 9 c.m. in diameter. On opening, a peculiar picture is seen. There is but a shell of muscular tissue which is surrounding a stony hard, round nodule. It measures 8½ c.m. in diameter. The muscular layer about it does not exceed ½ c.m. in thickness at any place. On cross section, which was possible only by sawing, a calcified periphery was seen; the central portion was soft and pulpy in consistency and brown in color.

Microscopic examination.—Section of the growth showed no organized tissue at all. The periphery seems to consist of old fibrous tissue which, however, has been replaced by calcium deposit. Section of the center portion shows structureless necrotic material. No cellular tissure is seen at any place.

Diagnosis.—Petrified myoma of the uterus.

TREATMENT OF NEUROSYPHILIS

DR. GEORGE WRIGHT

In the treatment of neurosyphilis it is essential to bear in mind the pathological processes present: perivascular, endovascular, meningitic, and parenchymatous. All of these lesions are due to reaction to the presence of spirochæte and its toxins. The loss of function and the possibility of a return of this function depends upon the amount of damage done and upon how much of this can be corrected in general. These factors are dependent upon the age of the lesion, the acuteness of the onset, and the amount and kind of treatment received. It is essential to make as early and accurate a diagnosis as possible, and to do this a history and physical examination should be elicited with the greatest care as well as having a serological examination made.

To accomplish results, syphilis should be treated in the primary and secondary stages. Although treatment of neurosyphilis is not a dermatological problem, the profession owes an enormous debt to the dermatologists for their work in determining dosage and toxicity of drugs used, together with methods of administration.

Dr. Harry Solomon, in his experimental work at the Boston Psychiatric Institute, concludes that the majority of cases do well upon the intravenous administration of arsphenamin and mercury without any intraspinal treatment. Serology is important in following the result of treatment, but the first aim should always be to relieve the patient of his symptoms. Some patients improve serologically and not clinically while others improve clinically and not serologically. In this connection it is important to bear in mind that in patients beyond 55 or 60 years of age who have a positive serology for syphilis, but no symptoms, it is better to let them go untreated, for apparently their own immunity has attenuated the spirochæte or the organism is isolated, whereas treatment may free the organism and its toxins so that the patient may develop symptoms later on. Several case histories were cited to illustrate this premise.

It is the practice of the author in the routine treatment of neurosyphilis to administer mercury for a week by either inunctions or intramuscular injections, and then to administer arsphenamin intravenously every week for six doses with or without mercury in the intervals. Then allow the patient to rest for one or two months and repeat. Such a course of treatment is given two or three times. Throughout these courses of treatment, it is essential to watch the patient's weight, kidneys and liver, and the patient should be maintained in the best possible physical condition. At the end of the courses check the results with a study of the serology, and after a period of rest repeat the course if indicated. If the patient is not doing well, more intensive treatment should be instituted, and even treatment intraspinally either by drainage alone in conjunction with the intravenous treatment or by the introduction of arsphenamin or mercury into the spine by the Ogilvie method.

TREATMENT OF NEUROSYPHILIS

DR. C. H. HENNINGER

When the etiology of a disease is known it is necessary to familiarize ourselves with the action of the virus from its entrance into the body through the entire course of the disease, to note the pathological changes produced, and the normal immunity developed against the disease.

In syphilis, the individual's resistance is manifested by the reaction on the skin in the early stages of the disease. In many cases, however, no reaction is noted by the patient and the disease may not be recognized until there is involvement of the central nervous system. Whether this lack of reaction on the part of the patient indicates a weak resistance or a mild type of infection we do not know.

The body's effort to overcome the infection is a factor that should receive our careful consideration during the course of treatment. Inefficient treatment with arsenical compound retards or prevents the normal development of immunity. And a patient poorly treated is handicapped in his fight against the disease. Mercurial compounds are considered less harmful in this respect and it seems that unless we can give the patient a thorough course of treatment with arsenical compound, it is better to use mercury and iodide.

Gennerich has contributed largely to our knowledge concerning the early invasion of the spirochæte into the central nervous system and he states that in all cases of early syphilis there is infection of the cerebrospinal fluid. If we accept as a fact the early involvement of the spinal fluid, then spinal fluid study becomes of the utmost importance, not only as an aid to early diagnosis but as a valuable method in checking the results of treatment. In fact, the disappearance of clinical symptoms and the persistent negative findings in the blood and spinal fluid are our only methods of determining the ultimate cure of a patient.

Salvarsan, arsenobenzol, and *arsphenamin* are different names for the same compound. Their dosage, frequency and method of administration depend on many factors: the stage of the disease, the condition of the patient, his age and weight, the presence or absence of organic disease of the heart, blood vessels and kidneys, and also by the way the drug is tolerated by the patient. The latter can only be determined by administration of the drug and a conservative dose should be used until the patient's tolerance is understood.

Neoarsphenamin. At the Dermatological Research Institute of Philadelphia, by experimental investigation they have shown that arsphenamin is one and three-fourths times more curative than neoarsphenamin, but it is at the same time two and one-half times more toxic. Neoarsphenamin is, therefore, preferable in certain cases where the toxicity is an important factor.

Silver Salvarsan. Dosage 0.1 gram to 0.2 gram. In the use of silver salvarsan all the precautions mentioned under consideration of arsphenamin should be rigidly observed.

Arteritic Forms of Cerebral Syphilis. In this particular type of cerebral syphilis, intravenous injection of arsphenamin meets most requirements. It brings a concentrated medication in direct contact with the diseased tissue and the greatest possible benefit should be expected. If, however, more serious complications of specific endarteritis are present, the treatment becomes more complex. When lumen closure of the blood vessel is brought about by involvement of surrounding tissue and this process is followed by softening and necrosis, or when a weakened blood vessel ruptures, the brain tissue supplied becomes permanently damaged and complete recovery cannot be expected.

Specific Cerebral Meningitis. Syphilitic cerebral meningitis is the most common organic involvement with which we have to deal. This condition, however, shows a fair prognosis if the patient receives treatment early. Practically all types of brain involvement begin with meningitis and in the treatment of this condition intraspinal medication is indicated.

Paresis. It is not always possible to make a differential diagnosis between paresis and other types of neurosyphilis and when a marked improvement in the clinical symptoms is noted the diagnosis should be doubted. We must always keep in mind the development of psychoses such as dementia præcox, manic-depressive insanity and melancholia in syphilitics where the syphilis has no part in the development of the disease, or at least acts only as a contributing factor. In juvenile paresis the onset is most frequent between the ages of 10 and 12 years, showing the period of incubation in hereditary syphilis to be approximately the same as that occurring in the adult. The treatment of paresis has always been disappointing. This has led to the intensive treatment and to various methods of administration such as the intradural and the intraventricular methods. These methods of administering medicine, however, do not seem to meet the requirements of safety for the individual treated.

Insomnia should be combated by baths, packs, and hypnotics. At least four hours' sleep is necessary to prevent exhaustion.

Psychic disturbances, when occurring in cerebral syphilis, demand freedom from mental work or irritating surroundings. This is best obtained in hospitals and sanatoriums.

Convulsive manifestations are not uncommon and occur in many of the cerebral conditions. They require special consideration and when Jacksonian in character may require surgical interferance. At all times we should endeavor to prevent their frequent occurrence. For this purpose bromides and luminal are the most valuable.

Frederick B. Utley, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

November 7, 1921

DR. E. B. HECKEL, *President*

Dr. Edward Stieren exhibited a case of traumatic dislocation of the crystalline lens into the vitreous in a high myope, followed by absorption of the lens.

A 29-year-old patient appeared August 29, 1921, stating that the left eye had been struck with a baseball a week before. At first examination the pupil was dilated ad maximum, the anterior chamber obliterated, with tension of 36 mg. McLain. The patient was a high myope, his correction being —12. S. in each eye. The vitreous was blood-stained but sufficiently transparent to be able to make out a round globular body fixed in the anterior lower vitreous chamber. Under myotics the pupil contracted and the tension became normal. Potassium iodid was exhibited internally, under which the vitreous cleared sufficiently to enable one to identify the globular body in the vitreous as the crystalline lens. As the lens remained stationary, it is presumed that the lower suspensory ligament remained attached to the lens capsule and anchored it in the position in which it was first noted. The lens has gradually become smaller by absorption, until at the present time, there is practically nothing remaining but the lens capsule. With —3. D. S., the vision is now 6/60 and gradually improving. The vitreous still remains somewhat cloudy.

Dr. J. Clyde Markel exhibited a case of tumor in the vicinity of the pituitary body.

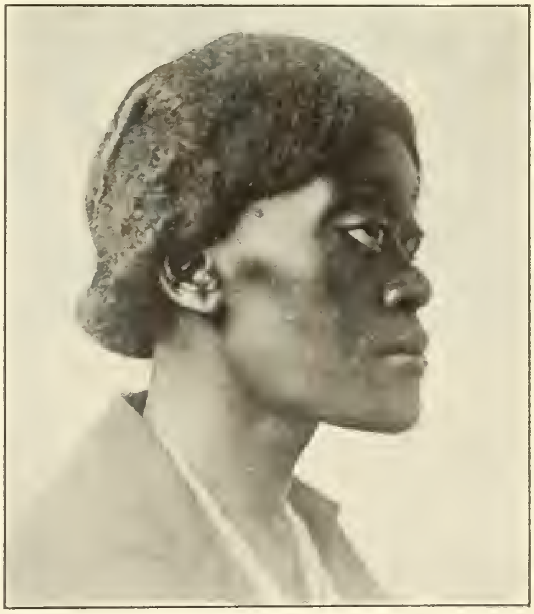

Figure 1.

Mrs. M. W., colored, aged 28. Father and mother living and well. Two brothers and one sister living and well. Two brothers and four sisters died in infancy of unknown causes. One sister died at the age of 30, of tuberculosis. Patient had always lived in the country in Georgia, until about two years ago, when she came to Pittsburg. She has had no illness, except measles and mumps, when a child. Menses began at age of 12 years and were always regular until she was about 18, when they began to become painful, accompanied by some temporal headache and dizziness. Relief was had when menses appeared. She married two years ago and her husband is living and well. She has had no miscarriages and has two healthy children, the older aged 1 year and 3 months, and the younger 3 months. The first pregnancy was normal, but during the second she had much toothache, was quite depressed at intervals—felt "so sorry all the time." About 6 years ago, while sitting in a chair, she suddenly had an attack of momentary blindness and dizziness, lost consciousness and was said to have yelled "Stop, stop" a number of times. This attack was of short duration and was the only one she ever had.

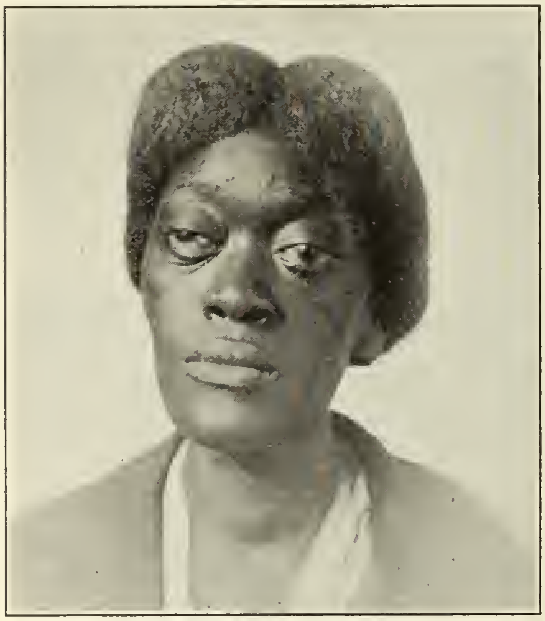

Figure 2.

Patient thinks she sweats more than normal and at times has a tingling sensation in both hands which is relieved by massage. She is about 6 feet tall and two years ago weighed 155 pounds. Her memory is poor; she "has no remembrance at all." She does the usual amount of housework daily without any unusual fatigue, although at times she gets short of breath and her heart palpitates on any unusual exertion. Her bowels are regular, no constipation, no unusual appetite for sugar or candy; skin normal. Has lost several molars, has several bad teeth, but no pyorrhea; no anosmia nor gustatory interference. Blood Wassermann negative.

Eight years ago a small soft tumor mass appeared on the second toe of each foot. These were painful on pressure, necessitating the slitting of her shoes to obtain comfort. Four years ago, a mass the size of a marble, appeared on the lobe of the left ear. At that time also, vision in the right eye began to fail gradually, accompanied by some pain in the eyes and head. She saw a local doctor, who told her she needed glasses, but none were gotten until recently, when she obtained a pair of —3.00 spheres for constant use. These were not comfortable and were not worn. She came to the dispensary on account of failing vision in the right eye.

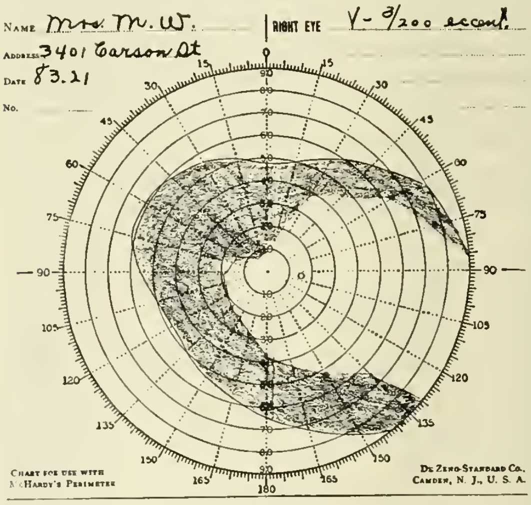

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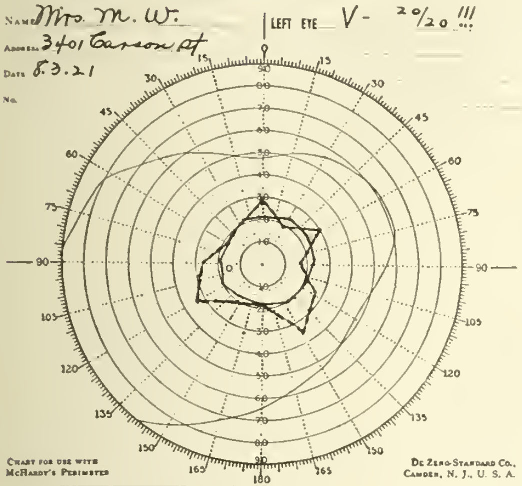
Chart for use with McHardy's Perimeter
De Zeng-Standard Co., Camden, N. J., U. S. A.

Vision O. D., 3/200, eccentric; O. S., 20/20 ? ? ?. She has marked proptosis of both eyes, more marked in the right, and partial ptosis of the right lid. There is scarcely any movement in the lower lid, O. D. When the eyes are closed the lower does not meet the upper, in the right, by about 6 mm., and in the left by 3 mm. On forced closure, the lids O. S. meet, but the right are separated by 3 mm. The Von Græfe sign is not present. The O. D. diverges up and out. There is a paresis of the internal recti of both eyes, and of the inferior of the right. The pupils are equal, and react to light, accommodation and consensually, as well as when light is thrown on the temporal half of the retina of O. D., giving Wernicke's hemiopic reaction. Ophthalmoscopic examination shows media clear, discs slightly oval, pale white atrophy, more marked in right eye. Fields: Almost the entire nasal field of O. D. obliterated, with no color perception. O,

S. normal for form, with some interlacing of red and green.



Drs. Schaefer and Grimm report the following: The x-ray examination of Mrs. M. W. reveals evidence of a tumor springing from the region of the sella turcica and deviating slightly to the right of the median line of the skull. As seen in the lateral view, it is approximately 32 mm. in width at its greatest diameter at the base, and 27 mm. at its greatest width at the apex. Its greatest length is approximately 46 mm. Its greatest lateral diameter, as seen in the antero-posterior view, is approximately 38 mm. It is of irregular outline and apparently has calculus-like deposits scattered throughout. The landmarks of the sella turcica are practically entirely oblierated by the tumor.

Dr. Stieren, in discussion, stated that, from the appearance of the shadow in the radiogram examined by him, he was inclined to the view that the lesion is a cyst, on account of the limiting membrane present. The proptosis is also due to a similar condition. The tumor mass, no doubt, arises from the posterior part of the pituitary body. That there have been no localizing symptoms develop is due to the slow growth of the lesion. He suggested radiographic examination in different positions to determine if gravity would make any change in the shape or localization of the mass.

Dr. Heckel suggested excision of the tumors on the ear and toes of the patient to determine their pathological nature. He is of the opinion that the cerebral tumor is not a neurofibroma.

DR. KREBS stated that he would report a case of pituitary cyst which was operated intranasally. The fluid never ceased dripping and the patient died three weeks after operation.

DR. S. L. KOCH reported a case of fluid vitreous complicating cataract extraction. The combined operation was done, up to the completion of the capsulotomy. The lens could not be tilted, and vitreous of the consistency of thin oil appeared. The operation was discontinued. The eye has healed and remains quiet after three weeks. Light perception and projection are good. Dr. Stieren advised transfixion of the edge of the lens with Fisher's needle, inserted from the temporal side of the corneal section. Pressure forward on the cornea, he believed, would deliver the lens with inconsequental loss of vitreous. Dr. Heckel advocated a new corneal section well within the clear cornea. Pressure above would cause the corneal flap to override, the upper edge of the lens would be anchored and permit of delivery from pressure below. G. H. SHUMAN, Secretary.

ABSTRACT FROM GAZETTE DES HOPITAUX

25th of August, 1921

TRANSLATED BY HUGH HAMILTON, M.A., M.D.

HARRISBURG

CANCER OF THE KIDNEY

Under the name of cancer of the kidney are included malignant tumors of that organ. The term "cancer" is considered in its clinical aspect and not in its histological sense as epitheliomas, sarcomas and the mixed tumors. The cancer of the kidney may be initial or secondary. The secondary cancers frequently following the neoplasms of the ovaries, of the uterus, of the liver, of the stomach and of the lungs, reproduce the type of the original cancer. The symptomatology appears to obscure the clinical indications of the original cancer and does not attract our interest from a practical point of view. The cancers caused by metastasis have none of the appearance of the initial cancer.

Etiology. The etiology is obscure, as is the case in all cancers; we do not have complete information of their frequency, nor of the age of the patient in cancer of the kidney. It is usually rare, occurring in only 7% of all cancers. As to age, it may be found at all ages, but most frequently in two periods of life: First, between forty-five and fifty-five, depending upon the individual. Second, in the child under six years, often at the age of two years. It is the only kind of cancer frequent in the baby.

Pathological Anatomy. From the studies of Lecène we may divide cancers of the kidney into three great groups: tumors due to adjacency, tumors of epithelial origin, and those tumors known as mixed. Tumors of adjacency are usually sarcomas, and are more frequent in children than in the adult.

Macroscopic Aspect. Of less size in the adult, in a child, sarcomas of quite a large size may be found, even as large as about ten pounds. Their development is rapid and they quickly interfere with the calibre of the kidney passages. We may say that the tumor is defined by the capsule of the kidney and separated from the renal parenchyma by the connective tissue of the capsule. Histologically, the tumor is made up of a homogeneous mass without inflammation, containing many enlarged cells. We find many of the vessels are of new formation, without proper walls, an important sign of sarcoma. The cells are of two varieties, as follows: First, fused-cell sarcoma, known by elongated cells, usually fused in groups in the fascia. Second, globular-cell sarcoma, distinguished by round cells, ordinarily small spheres with spindle-shaped poles—sarcoma of little round cells.

Tumors of epithelial origin. These are rarely bilateral, showing distinctly a right or left, as frequently shown by the superior pole. Their size varies. In a word, cancer is shown by gristly spindle cells with a yellow mark in the adjoining tissues. The renal veins are much dilated. The kidney descends more or less behind the colon.

Histologically, there are two kinds of cancer—those of the kidney proper, and those involving the capsule. Epithelioma of the renal type are of the two principal forms:

(a) The neoplasm attacking the tubules is large and irregular, enclosed in the parenchyma and sticking to the malpighian glomerules. The protoplasm is very close in color to the normal tissue, but has the usual large cells of epithelioma of the deep cells. In an advanced stage we find the evidence in the tubules not so serious, but that it has gone into the kidney tissues.

(b) The papillary or vegetative form is known by the axes close to a vascularity, on which are one or more sizes of epithelial, cancerous cells.

Epithelioma of the Suprarenals or Hypernephromes. This variety is often like that of the preceding description. It is distinguished by cells of quite limited outline, and has protoplasm scarcely of the color of the fatty cells (clear epithelial cells). The spindle-shaped cells are strongly colored in the center of the cell. The connective tissue is very rich in fats after hemorrhage in the tumor. Morphologically, the cells containing fat do arch in a manner repelling the cells of the capsule, frequently disturbing the kidney substance itself. The fact is well known that in animals the development of these tumors is not dependent on the tissues but originates in the fetal suprarenals. Such is the theory of Grawitz, ordinarily accepted. However, lately, MM. Roussy and Lerue criticized that theory, basing their criticism uopn the following facts:

First, wandering suprarenal cells are the exception in the human being.

Second, epithelioma of the kidney shows zones of clear cells and layers of darker cells, with transition cells forming between them.

Third, the fatty cells are characteristic of the suprarenals.

Fourth, the original cells of the suprarenals are *cloudy*, not *clear* cells.

Mixed tumors are especially disposed to affect children, at first in the kidney proper, and later the capsule, when it is fatal. Histologically, they are found in many tissues: muscular fibers, fatty tissues and elastic tissue. They split up cartilages, and attack the nerve elements and all ganglionic cells. They are known under the name of "adenosarcoma." They are extended, as are all malignant tumors.

Cancer of the kidney is transmitted to other organs in different ways, viz:

1. By adjacency—from the suprarenal capsule to the uterus, then to the lower intercostal nerves, to the muscles of the chest walls, to the venæ cavæ, to the aorta, to the spine, to the marrow, to the several abdominal organs (the colon, spleen, liver and pancreas).
2. Through the blood vessels, very slowly radiating from the sarcoma.
3. By the lymph channels, which sometimes in sarcoma of children, produce great ganglionic masses in front of the vertebral column.

DISORDERS OF SPEECH

Smiley Blanton, Madison, Wis. (*Journal A. M. A.*, Aug. 6, 1921) believes the disorders of speech to be due to the lack of ability to adapt oneself emotionally to social situations, or to a faulty motor mechanism, either hereditary or acquired. The most worth-while results which are obtained at present are those which aim at the underlying cause and at general hygiene, and muscle training. Training aimed at the alleviation of the symptom alone is pernicious because it obscures the issue and in hysterical cases actually "sets" the disorder. This is most distinctly a medical problem, and neropsychiatric training is necessary for the diagnosis and treatment of these patients. Blanton urges the necessity for training medical students in the value of speech disorders as a significant symptom.

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January, 1922

EDITORIALS

MEDICOLEGAL APPLICATION OF HUMAN BLOOD GROUPING

Up to the present time there have been no reliable laboratory tests for determining the parentage of any child whose legitimacy is questioned. Precipitin and complement fixation tests do not differentiate one race of human beings from other races or one individual from another individual, although there are accurate and reliable means for differentiating the blood of a human being from such lower animals as the horse, dog, chicken, etc.

Instances where a reliable test was desired for determining the parentage of a child are not infrequent; during the past year several have commanded altogether too much attention in the public press.

It is now well known that the agglutinins in human sera for human corpuscles belong to four groups, and in 1908 Epstein and Ottenberg[1] noticed that the groupings were hereditary and followed Mendel's law. Two years later von Dungern and Hirschfeld[2] examined the blood of 348 individuals belonging to 72 different families, and recently Ottenberg[3] has analyzed their results and determined that blood grouping of the child and the alleged parents will determine correctly the parentage of the former in at least 80 per cent of unions. In about 20 per cent of instances the determination cannot be made: the child may belong to group I, in which case the parents may be of any combination of the other three groups; or one of the parents may belong to group IV, in which case the child may be of any one of the four groups; or the parents may belong to groups II and III, in which case the child may belong to any group. But if the child's blood is found to belong to the correct group for the alleged parents, then that child *could* be theirs, although it is not necessarily so because the co-respondent may by chance belong to the same group as the disputed parent. But on the other hand according to Ottenberg, "if the child's group is wrong for the two asserted parents, then one can say with absolute certainty that the child must have a parent other than one of those asserted." The test is simple and may be conducted in any laboratory equipped for grouping human blood, but is not reliable with the corpuscles of infants less than six months of age because the corpusles of infants are insusceptible to agglutination. It is most likely to prove correct and conclusive if the child is two or more years of age.

This work requires further corroboration before it can acquire a definite legal status but the analysis and deduction are convincing and very propably will be found correct. J. A. K.

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1. Trans. N. Y. Path. Soc., 1908, 8, 117.
2. Ztsch. f. Immunitätsf., 1910, 6, 284.
3. Jour. Immunology, 1921, 6, 363.

THE ADVANTAGE OF PHYSICAL EDUCATION AS A PRENTIVE OF DISEASE

If we view man as a trinity of mind, body and soul, all equally developed toward perfection, then to physicians the intellectual and moral parts must fall far short of the goal, judging from man's physical shortcomings and defects, which are ever before us. History thoroughly has impressed upon our minds the fact that there was a time in the Grecian ascendency, when both intellectual supremacy and national strength were due to the interest of the government in the physical education of the people, when the gymnasium for the education of the body shared equally with school for the education of the mind, and a type of man was produced ever to be emulated all over the world. Whatever may be our explanation of the decline of the human race from that physically successful era, the fact of a decadence, and an inherent tendency thereto in the human constitution, furnishes the strongest reason possible for physical education.

Preventive medicine occupies the foremost place at the present time. The prevention of disease supplants the cure, and this is the reason for physical education. The father may scold and the mother implore, yet the relaxation and lassitude incident to commencing disease in the round-shouldered, thin-chested and rapidly growing boy or girl, continue in evidence of the need of proper exercise, because a sufficient incentive for it is lacking.

It is because exercise is voluntary, as well as muscular, that it must be a part of education. Likewise, because it is voluntary, regularity and method are essential features of whatever form of training is chosen. Of all times of life, this is most needed at school and college. If one does not obtain right exercise there, or by substituted outdoor activities or pleasure, then in some way it should be engrafted in the curriculum of home life. It was Washington Irving who said, "I am convinced that he who devotes two hours each day to vigorous exercise, will eventually gain those two hours and a couple more into the bargain."

Are we, as physicians, prescribing physical education to its fullest extent? F. C. H.

THE RECENT RESEARCHES UPON YELLOW FEVER

Since the year 1900, when the "Board of Medical Officers Appointed by the Surgeon-General of the United States Army for the Purpose of Pursuing Scientific Investigation with Reference to the Acute Infectious Diseases Prevalent on the Island of Cuba," and composed of Reed, Carroll, Lazear and Agramonte, reported that Charles J. Finlay was correct in his opinion that the disease was transmitted by the mosquito Stegomyia calopus, that contact with patients or with fomites was harmless, that the virus was of unknown nature, and filterable through Berkefeld filters, no important contributions concerning the etiology of yellow fever appeared, until Noguchi took up the subject in 1919, and in a series of more than a dozen contributions appearing in the *Journal of Experimental Medicine* for 1919, 1920, 1921, claimed to have discovered the cause of the disease, to have cultivated it, and devised means of preventing the disease through the use of vaccines.

As the investigations of Noguchi followed logically upon others of related subjects, and are convincing to those having little or no experience with yellow fever, though they make a different impression upon others familiar with the disease, it seems worth while to consider how the matter really stands at the present time.

Since the time of Hippocrates occasional epidemic outbreaks of jaundice have been observed, and have received mention from the pens of many authors. Lancereaux wrote of it as "Ictère grav essentiel"; Landouzy, as "Fièvre bileuse"; Mathieu as "Ictère febrile á rechutes." The latter author described the symptoms of the disease in 1886, and pointed out that it was an *infective jaundice*. In the same year Weil carefully studied four cases, and since that time the disease has been known in this and other countries by his name—Weil's disease.

Many bacteriological studies of Weil's disease have been made from time to time, but the results were not in agreement, and the cause of the infection remained uncertain until 1914, when two Japanese investigators, Inada and Ido, studying the disease in Japan, found that the intraperitoneal injection of the blood of patients into guinea pigs caused a disease whose symptoms were in sufficient correspondence with those of Weil's disease of man to be regarded as identical. In the blood, various organs, and urine of *all* of these animals they found a minute spiral microorganism to which they gave the name Spirochæta icterohemorrhagiæ, and which they regarded as the cause of Weil's disease. Their results were quickly confirmed by many others—Uhlenhuth and Fromme, Huebner and Reiter, Stokes and Ryle.

Another disease characterized by hemorrhagic jaundice, rarely seen in this country, but by no means uncommon in Japan, goes by the name of "rat-bite fever," because it follows the bites of rats, which are common in the native houses of that country. No doubt the discovery of a spirochæta in Weil's disease stimulated the investigation, for it was only two years after the work of Inada and Ido that Futaki, Takaki, Taniguchi and Osumi, in Japan discovered a somewhat similar, but not identical spiral microörganism in the blood of these cases, and found that it could be transmitted to guinea pigs in the same manner as the Spirochæta icterohemorrhagiæ. To it they gave the name Spirochæta morsus muris. They found it in *all* of the nine cases that were available for study.

Only one disease remained characterized by hemorrhagic jaundice, yellow fever, and it is therefore not surprising that an attempt should be made to apply the same method of examination to it in the hope of similar results.

Under the auspices of the Rockefeller Institute for Medical Research, therefore, Noguchi was sent to Guayaquil, Ecuador, where yellow fever was prevalent, for the purpose of making the investigation. Papers publishing his results have appeared in orderly sequence as one and another of the problems of the disease was attacked and solved, and a review of them shows the following:

I. The first of Noguchi's papers is a clinical study of the disease in the Yellow Fever Hospital at Guayaquil, to show that it really was yellow fever. It concludes with the statement that "The clinical and pathological features of the yellow fever prevalent in Guayaquil conform with those described by other investigators of this disease as it has occurred elsewhere, both epidemically and endemically."

II. The second contribution deals with the experimental side of the investigation, and the attempt to transmit the disease to animals. Eighteen different varieties of mammals and birds were used, but the attempt failed in all except the guinea pig. "By injecting into guinea pigs the blood of yellow fever cases occurring in Guayaquil a group of symptoms and lesions closely resembling those observed in human yellow fever was induced in a limited number of instances. Of 74 guinea pigs inoculated with specimens of blood from 27 cases of yellow fever, 8, representing 6 cases, came down with symptoms resembling those of the disease in man and showed similar lesions at autopsy. In the blood, liver, and kidneys of the guinea pigs experimentally infected with the blood of yellow fever patients, a minute organism was demonstrated which closely resembles in morphology the causative agent of infective jaundice (Leptospira icterohemorrhagiæ). The leptospira transmitted from yellow fever cases to guinea pigs was found to induce similar symptoms and lesions upon further passage into normal guinea pigs. The leptospira obtained from cases of yellow fever has been given the provisional name Leptospira icteroides."

III. In the third paper Noguchi shows that the Leptospira icteroides obtained from the blood and organ emulsions of infected guinea pigs, and artificially cultivated, is capable of infecting guinea pigs, dogs and monkeys. The appearance of symptoms is in all cases preceded by an incubation period varying from 72 to 96 hours. "The symptoms and lesions observed in animals experimentally infected with Leptospira icteroides closely parallel those of human yellow fever."

IV. The next paper continues the discussion by showing that "the majority of the guinea pigs inoculated with the blood of yellow fever patients escaped fatal infection" but that "most of these guinea pigs, when later inoculated with an organ emulsion of a passage strain of Leptospira icteroides, resisted infection. On the other hand, the animals that had previously been inoculated with the blood of malaria patients or normal guinea pigs died of the typical infection after being inoculated with the infectious organism emulsion."

V. In the next paper, the "Properties of Blood Serum of Yellow Fever Patients in Relation to Leptospira Icteroides" are considered. In these immunological studies, the Pfeiffer reaction was the first to be considered, and found to be positive in fifteen of the eighteen cases studied, or approximately 83 per cent. "Protection from an ultimate fatal infection was afforded some of the guinea pigs which received the serum of yellow fever convalescents, while the control animals succumbed to the infection with typical symptoms. From these observations of the immunity reactions it appears highly probable that Leptospira icteroides is etiologically related to yellow fever."

VI. The next paper deals with the "Cultivation, Morphology, Virulence, and Biological Properties of Leptospira Icteroides." This is a long and technical paper, the outcome of which is to show that "On three occasions, that is in *three out of eleven cases* of yellow fever, the organism (Leptospira icteroides) was directly cultivated. These three strains were found to induce the characteristic symptoms and lesions when tested upon guinea pigs. The organism was also obtained in pure culture from the blood of guinea pigs which succumbed to infection after being inoculated with the blood or organ emulsions from patients suffering from yellow fever. These cultures also proved to be virulent when tested on susceptible animals. The organisms multiply by transverse division. Their virulence is such that with some strains 0.00001 cc. of a culture could induce typical fatal infection in guinea pigs. It is killed in ten minutes at an exposure to 55 degrees centigrade. It is also destroyed by complete dessication or by freezing and thawing. Bile and bile salts dissolve it in certain concentrations, but not saponin. Leptospira icteroides passes through the pores of Berkefeld filters V and N, and there is a possibility of its having a granular phase of life under certain conditions.

VII. This paper deals with "The Demonstration of Leptospira Icteroides in the Blood, Tissues, and Urine of Yellow Fever Patients and of Animals Experimentally Infected With the Organism." "Examinations of fresh blood from yellow fever patients by means of the dark field microscope, made in more than 27 cases, revealed, in *three* cases the presence of Leptospira icteroides. In no instance was a large number of organisms found, a long search being required before one was encountered. * * * Examination of the urine from different cases of yellow fever were made both by the dark field microscope and by inoculation into guinea pigs. The results were totally negative in 13 cases, including many convalescents, but in one case one of the guinea pigs inoculated with ten cubic centimetres of the urine came down on the fifteenth day with suggestive symptoms. The specimen showed no leptospira by dark field examination. In experimental infection of guinea pigs with Leptospira icteroides, the blood became infective in many instances in 48 hours after inoculation, and was always infective after 72 hours. The organisms were most abundant on the 6th or 7th day, but became fewer or completely disappeared before death. In the meantime the number of organisms increases in the liver and kidney, from which they disappear as the jaundice and other symptoms become aggravated. When death occurs these organs seem to have lost most of the leptospiras, and positive transmission by means of them is less certain. At the later stage of the disease the blood is often free from the organisms, and ceases to be infective. Possible transmission with blood obtained from moribund animals is not impossible, however, even when no leptospira can be detected under the dark field microscope."

VIII. This paper has to do with the "Presence of a Leptospira in Wild Animals in Guayaquil and its Relation to Leptospira Icterohemorrhagiæ and Leptospira Icteroides." The outcome of these studies was the discovery that such leptospiras as were found in the wild animals belonged to the icterohemorrhagic group and not to the yellow fever group.

IX. This contribution is to be looked upon as one of the most important. It deals with the problem of transmission, i. e., "Mosquitoes in Relation to Yellow Fever." The experiments show that symptoms and lesions closely resembling yellow fever in man may be induced in guinea pigs by the bite of female Stegomyias that have previously sucked the blood of a yellow fever patient or of an animal experimentally infected with Leptospira icteroides. With mosquitoes infected directly from a yellow fever patient the infectivity seems to become manifest after a longer period of incubation than with those infected with the animal blood. In the former, at least 12 days are said to be necessary before they become infectious, and this hypothesis seems to be borne out by the present experiment. On the other hand the mosquitoes which were engorged with the infected blood of the guinea pig were found to be capable of transmitting the disease within eight days after the feeding. This discrepancy may be explained by the fact that the number of leptospira existing in experimentally infected guinea pigs is far greater than in human blood. The frequency with which positive transmission by the Stegomyia was obtained in both instances was very small indeed, in view of the number of mosquitoes employed. It appears that even under natural circumstances the percentage of mosquitoes that eventually become infected with the yellow fever microbe by sucking the blood may be very small. It has already been shown by previous investigators that to transmit yellow fever from a patient to a nonimmune person requires from 0.1 to 2 cc. of blood at the height of the disease. According to his estimate a female stegomyia may take up 0.01 cc. or even less. Apparently a mosquito occasionally becomes infectious by taking up one or two organisms which happen to be circulating in the peripheral blood of man, and it is these occasionally infected few that carry the disease. It is not difficult to realize the extent of the ever-increasing danger from a constant supply of the microbic virus which an endemic center or an epidemic of yellow fever can provide. One infected mosquito may mean many patients, and the life of such a mosquito is usually longer than that of the person whom it fatally infects.

Finally it is of interest to note that the development and maintenance of Leptospira icteroides are indispensibly associated with the blood constituent, the serum, and that this is amply supplied by the blood-sucking insect. The organism is one of the most fragile of all the pathogenic parasites and cannot survive the concurrence of other less fastidious organisms such as bacteria.

The comparatively aseptic body cavity of the Stegomyia furnishes a secure shelter for the parasite, which undoubtedly penetrates the zone of safety as soon as it is taken into the stomach of the insect. Unlike many other parasites, this organism is capable of penetrating the intact skin or a bacteria-proof filter, and hence it is probably an easy matter for it to pierce the tissue of the visceral organs of the mosquito. Whether or not Leptospira icteroides can survive and multiply only in the body of Stegomyia calopus and not in other varieties or genera is yet to be determined.

Another interesting fact with regard to the extrinsic life of this organism is that it can multiply steadily at a temperature from 18 to 37 degrees centigrade. The optimum temperature at which it remains viable for many months, is 26° C. The climate in most of the tropical countries offers optimum conditions for Leptospira icteroides and for the mosquito which carries and nourishes it.

X. In this paper Noguchi considers the "Comparative Immunological Studies on Leptospira Icteriodes and Leptospira Icterohemorrhagiæ." The matter is highly technical, and while comprehensive, leaves some small doubt as to the meaning of the facts brought out. In the author's mind, however, there is no doubt. He finds that one infection with Leptospira icteroides, if lived through, protects against future fatal infection; that a similar infection by Leptospira icterohemorrhagiæ, if lived through, similarly protects against future fatal infection with that of microörganism. But he finds that each lived through infection confers some, though a varying degree of immunity, upon the other microörganism. This is interpreted to mean that the two microörganisms are closely related—a deduction well within reason and in full conformity to known immunity reactions among other related forms of bacteria .

XI. This paper deals with the "Serum Treatment of Animals Infected With Leptospira Icteroides." The synopsis at the end, gives as much of the matter as is necessary, in these words: "The use of a polyvalent immune serum of high potency in the treatment of an experimental infection of guinea pigs with Leptospira icteroides was found to be of definite advantage in checking the progress of the infection. When administered during the period of incubation, the serum was found capable of completely preventing the development of the disease although, on subsequent examination, hemorrhagic lesions of greater or less number and extent were found in the lungs of the guinea pigs which survived. Moreover, the serum modified the course of the disease and when used in the early stages of the infection prevented a fatal outcome. Employed at a later stage, however, when jaundice and nephritis had been present for several days and the animal was near collapse, the serum had no perceptible beneficial effect. This was, of course, to be expected in view of the incidence of various pathological phases of the disease—nephritis, hepatitis, and other toxic symptoms in succession. In man the clinical manifestations are more gradual and distinct than in the guinea pig, yet the yellow fever patient whose temperature is subnormal, and who has reached the stage of hemorrhages from the gums, nose, stomach and intestines, and of uremia and cholemia, would seem to have little or no chance of deriving benefit from the use of a specific immune serum. This latter assumption would probably hold, irrespective of the relation which Leptospira icteroides proves to have in the etiology of yellow fever."

XII. The last paper in the numbered series has to do with "Chemotherapy Versus Serotherapy in Experimental Infection with Leptospira Icteroides." In it appear the reports of attempts to cure guinea pigs infected with the leptospira, through the administration of salvarsan and neosalvarsan. It was found that among animals treated with these agents there were more recoveries than among controls, but that the results were not in proportion to the amounts of the drugs administered, and all of the experiment animals were obliged to pass through the typical infection with all of its symptoms. It was extremely doubtful, therefore, whether the administered agents mitigated the severity of the infection.

In direct contrast with the effect of the chemical agents was the effect of the immune serum. When this was given in doses of 0.0001 cc. or 1 cc. of 1 cc. of a 1:10,000 dilution, guinea pigs were protected from an infection with at least 5,000 minimum lethal doses of the microörganism, when injected simultaneously, though the same serum failed to exert any injurious effect upon the organism when mixed *in vitro* in concentration weaker than 1:2,000. A rapid disintegration resulted with a concentration of 1:20, and almost complete agglutination and degeneration in 1:200.

The contrast between chemotherapy, as carried out with salvarsan and neosalvarsan, and serotherapy, demonstrated with an immune serum, is apparently of considerable practical significance.

From these brief abstracts it will at once be apparent that an immense amount of painstaking work has been done, upon the extent and thoroughness of which the author and investigator ought to be congratulated. The orderly sequence in which the investigations have followed one another, and the manner in which they answer one after the other the important questions concerning the etiology, the parasitology and transmission, as well as the immunology and therapy of the disease makes a strong appeal. There are, however, a few men long familiar with yellow fever, to whose better informed minds the observations and deductions of Noguchi do not ring true.

One of these is the veteran yellow fever expert, Juan Guiteras. If there lives a man well qualified by experience and practice to criticize the work, it is he. For years he was the yellow fever expert of the U. S. Public Health and Marine Hospital Service of our Government, having come to the proficiency of an expert through long residence in Havana, where the disease was endemic. After having been for years the Professor of Pathology in the University of Pennsylvania, he returned to Havana at the very time that Reed, Carroll, Lazear and Agramonte were conducting the investigations that made them famous, and later, under the republic of Cuba, was appointed the President of the Superior Board of Health of Cuba. Before allowing ourselves to be convinced by the work of Noguchi, let us see what he has to say about it in a lecture delivered before the Academy of Medicine of Havana, February 14, 1921, and abstracted in the *Journal of the American Medical Association:*

"If the disease be so easily communicable to lower animals (dog, guinea pig) how was it possible to eradicate it by breaking the chain between yellow fever and man as was done in Havana? And how is it possible that there have never been any epizoötic manifestations of yellow fever among animals in endemic centers during great epidemic invasions?

"Noguchi's organism is easily inoculated through various superficial lesions of the skin, whereas all fear of necropsies has been lost since the discoveries of Reed, Carroll, Lazear and Agramonte. Fomites, blood, and viscera have been handled by careless assistants without ever causing infection. Fomites, in fact appear to be absolutely inocuous.

"The number of cases in which Noguchi has succeeded in demonstrating his parasite, either by direct examination or by inoculation into guinea pigs, is relatively small.

"Noguchi has had a considerable number of successes with blood taken after the third day of the disease, while the experiments of the American Commission tended to show that the virus disappears from the peripheral circulation after the third day.

"Noguchi's experiments with the transmission of his virus from man to the guinea pig, through the mosquito have been few. Out of six experiments, *one* was successful, and *one* doubtful, and he has not been explicit with regard to the details of the positive case.

"The anatomical lesions found in guinea pigs infected with Noguchi's organism are quite distinct from those that we find in man with yellow fever. On the other hand, they are identical with those found in Weil's disease and in pigs infected with either of the leptospiras.

"The epidemiological and clinical differences between yellow fever and Weil's disease are so fundamental that it is difficult to believe they are produced by two such closely allied organisms as are the two species or sub-species of Inada and Noguchi."

After discussing the clinical and hematological differences between yellow fever and Weil's disease, Guiteras expresses the opinion that there is no convincing proof of the efficacy of the vaccine and serum prepared by Noguchi and expresses the opinion that they have come into play at times when active measures for the eradication of the disease were already in progress.

He concludes with the statement, "It may be that the leptospiral infection found in some cases of yellow fever is a secondary infection similar to those that are found in influenza, the actual causative agent remaining as yet unknown. This is, however, but a theoretical suggestion. Let us hope that the genial Japanese investigator may be able to establish his discovery upon a firmer basis."

One need not be very old to have suffered disappointments with respect to yellow fever discoveries. Twenty-four years ago Sanarelli published such convincing facts about his Bacillus icteroides as to lead a majority of the profession astray, and among them no less a bacteriologist and experienced and capable clinician than George H. Sternberg, well known as a yellow fever expert. Almost to the time of his death the latter was strenuously contending that he, himself, was the real discoverer of the cause of yellow fever, because the bacillus found by Sanarelli, was identical with a certain Bacillus X, which he had long years before isolated from a yellow fever patient, and discarded because he did not consider the evidence of its etiological importance sufficient to justify its publication as the cause. So long as Bacillus icteroides had any standing as the probable cause of yellow fever, the controversy raged, but when Reed, Carroll, Lazear and Agramonte began their work in Havana, the first thing they did was to investigate and extinguish its importance, after which it tok its proper place as an occasional secondary invader.

Those who are familiar with the details of the Bacillus icteroides vs. Bacillus X controversy, and remember how every requirement of specificity on behalf of Bacillus icteroides was apparently met by independent investigators, like Wasdin and Geddings, will not willingly be caught in a similar receptive frame of mind. Whoever asserts that a certain microörganism is the cause of so important and so controversial a disease as yellow fever, must expect to be called upon to support his claims beyond any doubt.

We recall with interest that in 1907 a spirochæta was discovered unexpectedly in mouse carcinoma, by Gaylord, who supposed it to be the cause of carcinoma—a desideratum devoutly to be wished. Further studies of mice, however, showed that infection of mice by spirochætes was not uncommon, and that in some places as many as 70 per cent of the animals were infected, without suffering from carcinoma. The presence of the microörganisms was certainly accidental as far as the carcinoma was concerned.

We also recall that in 1909 Stimson (see Castellani and Chalmers, 1919, p. 448) discovered an organism which is mentioned under the name Spiroschaudinnia interrogans. In looking the matter up we find that Spiroschaudinnia is a synonym used by Sambon for the old genus Spirillum, and that it includes Spirillum obermeyeri now more commonly known as Spirochæte recurrentis. Curiously this observation of Stimson's seems to have fallen by the wayside, and few persons are acquainted with it.

So when the whole matter is boiled down into brief form, it amounts to no more than that Noguchi, evidently expecting to find a spiral organism in yellow fever, because of its resemblance to the hemorrhagic jaundices, succeeded in finding and cultivating from a very small number of cases one that may or may not be identical with that already observed by Stimson; in showing that it differed slightly from the species already described as causing Weil's disease and rat-bite fever, and that it is infectious for guinea pigs and some other lower animals. He has, however, not satisfactorily shown that it will cause yellow fever when inoculated into man, and so has not proved that it is really the cause of yellow fever. J. McF.

SOME INTERESTING EVENTS IN THE HISTORY OF GLANDULAR PHYSIOLOGY AND PATHOLOGY

The medical profession believed for hundreds of years in an interrelation and interdependence of the functions of the various organs of the body.

Bordeu, in 1775, claimed that every organ creates specific bodies necessary for the integrity of the whole organism and that these bodies enter the lymphatic or venous channels. He thus explained the symptoms accompanying castration, puberty and the menopause.

In 1830 Johnnes Miller taught that the spleen, thyroid, adrenals, thymus and placenta supplied a secretion.

A. A. Berthold of Gottingen, in 1849 demonstrated the influence of testicular secretion on the organism by transplanting the testicles of cockerels into others who had been castrated.

Brown-Seguard in 1869 taught that the well-being of the body was dependent on certain substances that are supplied by glands, having excretory ducts or not, and that the absence of such substances would result in pathological conditions. In 1889, at the age of 72, he reported as the result of an experiment on himself, that the injection of testicular juice increased his physical and mental vigor. It was the observation of this sagacious student and investigator that led the way to the practical application in recent years of the various glandular products in diseased and abnormal physical conditions. The thyroid gland has thus far been studied more carefully than any other one of the ductless glands. The recent literature on this subject would make a good sized volume.

In 1882, Reverdin and Kocher called attention to the cachexia that follows the complete removal of the thyroid gland. Hyperfunction of the gland, or the condition now known as exophthalmic goiter or hyperthyroidism, was described by Parry in 1825, by Graves in 1835, and by Basedow in 1840. These men gave as clear and detailed clinical descriptions of this condition as any of the present day, but it remained for recent investigators to make a scientific study of the physiology and chemistry of the thyroid and its relation to basal metabolism and nitrogen elimination and various nervous and functional disturbances.

E. C. Kendall, of the Mayo Clinic, in 1914 made very interesting and extensive investigations of the thyroid, and found that iodin was present in organic combination in two different forms. He obtained the products by hydrolysis of the gland. A portion of the products so obtained was soluble in acid and the remainder was insoluble. The portion that was insoluble he designated as group A, and the portion that was soluble in acid as group B. He isolated the active principle known as thyroxin in crystalline form from the products in group A. This body contains as much as 60% of iodin. He found that the administration of thyroxin produces the same effects as the giving of desiccated thyroid gland and that if given in suitable doses the one relieved the symptoms of myxedema as well as the other and that the basal metabolism depended on the amount of thyroxin in the tissues of the body.

The A-iodin compound in very small doses he found to produce a tonic effect and seemed to be essential to life. If thyroxin is given by mouth or hypodermically in sufficient dose, it produces the typical symptoms of hyperthyroidism, such as tachycardia, slight increase of temperature, marked increase of nitrogen elimination with loss in weight, increase in nervous irritability and tremor, nausea, and vomiting, diarrhea and sweating may also occur.

The toxicity of the products of group A he found to be in proportion to its iodin content. Kendall found the compound which he designated as group B to be nontoxic, though it contained about one half of the total amount of the iodin in the thyroid proteins. When this substance was administered internally it relieved certain skin symptoms that are found in myxedema, as burning sensation with smarting, itching areas, soreness in the bones and joints and cramps in the muscles.

Kendall suspects a possible relation between the proteins of group B and group A and that group B supplies to group A its requisite amount of iodin. The ultimate cause of simple goiter is still unknown but Marine and Kimball find that the immediate cause is a lack of iodin. They made the interesting observations that the hyperplasia of the thyroid that follows a deficiency of iodin in the system or a partial removal of the thyroid may be prevented by the administration of small doses of any salt of iodin.

They found that the administering of very small doses of sodium iodid protects the hyperplasia of the remaining thyroid against compensatory hyperplasia after the removal of as much as three-fourths of the normal gland in cats, dogs, rabbits, rats and fowls. They found that if the iodin in the thyroid is maintained at 0.1 per cent, no hyperplastic changes occur and hence no goiter can develop. Halstead has shown, in dogs, that if most of the thyroid is removed in early pregnancy and idoin carefully excluded, the young at birth will have enlarged thyroids, and that if one milligram of iodin is given at weekly intervals it is sufficient to prevent thyroid hyperplasia in pups.

Marine and Kimball have applied this principle of preventing thyroid hyperplasia in the human by giving small doses of sodium iodid to school children with very encouraging results. After two and one-half years' observations on the school girls of Akron, of 2,190 pupils taking 2 gm. of sodium iodid twice yearly, only five developed thyroid enlargements, while of 2,305 pupils not taking the treatment 495 developed thyroid enlargement. They also found that, of 1,182 pupils with thyroid enlargement at the first examination who took this same treatment, in 773 the thyroids diminished in size; while of 1,084 pupils with thyroid enlargement at the first examination who did not take the treatment, 145 thyroids decreased in size.

It seems to the writer these observations are sufficiently conclusive that a far more extended application of this prophylactic measure should be made. The treatment is so simple and the observations so easily made that every practitioner of the land may apply it.

Marine and Kimball gave 2 gm. of sodium iodid in .2 gm. doses over a period of two weeks, twice a year. If this is given to the mother while pregnant it will prevent hyperplasia of the thyroid in herself as well as in the child.

They advocate giving this treatment to children especially between the ages of 11 and 17. The writer feels it should be given to males as well as females, for many young men who were examined for service in the army had hyperplasia of the thyroid. It would seem that much good could be done to the public by a campaign of education for the dissemination of much practical knowledge that we now have on the prevention of goiter. Such campaigns are being made to inform the public on the prevention of cancer and tuberculosis. Why not make the same effort to prevent the development of goiter? If public health officers in all cities and communities would urge the physicians of their respective districts to encourage the mothers of families to coöperate with the family physician, it would seem that an incalculable amount of good could be done, especially in regions in which goiter is common. It would be well if this prophylactic measure was carried out during pregnancy, infancy and adolescence.

G. E. H.

EX LIBRIS MEDICI

"TO LIE LIKE TRUTH"

The editorial nervous system may not, in the strict histological sense, be composed of "flesh and blood," but it is composed of something equally unstable, and much more irritable, and at the end of a hard day's work is apt to be in a state of disturbed equilibrium. Especially is this true when too much time out of the working hours has been spent in entertaining visitors whose only purpose in coming to the office seems to be to engage in that great time-waster, pleasant conversation.

It is no wonder, therefore, that as we were making an earnest attempt to clean up the editorial desk, and answer the accumulated correspondence, we were impatient at the entrance of our good friend with a book in his hand.

We stood up to receive him, as though to indicate that the interview was to be brief, and asked in a manner intended to be curt, though we were ourselves a little shocked to hear how brusque it sounded, "Well, what have you got to say?"

"Oh, I'm not a book agent, and don't want to be treated as such. I'm only the 'gad-fly buzzing about.' "

"Well, buzz away, but don't buzz too long."

"If you'd rather, I'll call some other time." He looked so disappointed that we mollified somewhat, and held out our hand for the book he proffered. But as soon as we read the title, our irritation increased, changed to indignation, and without another word we threw the book violently down upon the table, sat down and took up some papers as though to proceed with our interrupted work.

"Well, that reminds me of one day when I was a young man and a student in Berlin. A certain professor to whom I had been talking about the contents of a book, informed me that there was no such book. I insisted; he also insisted, and impressively continued that he was familiar with all of the literature upon the subject, and could not be mistaken. Later I went to the Könliches Bibliothek and got it and, not realizing what the consequences might be, took it to him to prove myself right. Up to that time I had no idea that a German professor was infallibile. As I held it out to him with the simple statement that it was the book that I had been talking about, and with which he was unfamiliar he snatched it from me, and violently threw it at my head. Here I come with a most interesting book for you to look at and you treat me in much the same way. However, I am not insulted, it is the author's affair. I see, however, that you are as unfamiliar with this book as my Berlin professor was with the one I took to him."

"We know nothing about the provocation of the German professor," we said, "but it is enough for us that this book is written by George Bernard Shaw."

"Hum, and what is the matter with poor Shaw?"

"George Bernard Shaw," we assumed our most impressive style, and chose our words with care, "is a man for whom an enlightened physician can have no respect, in whom he can take no interest, and from whom he must feel that he has received the most profound ridicule and sustained the deepest insult."

"Uh, hu, you have read 'The Doctors' Dilemma,' then?"

"No, we have not read it, nor do we want to. It is a pack of lies."

"Well, maybe it is, but lies are of various quality; some of them are very disconcerting, you know. What was it that Macbeth said when his soldiers told him that Birnam Wood seemed to be advancing upon Dunsinane? 'I doubt the equivocation of the friend that lies like truth,' wasn't it?" "That is what Shaw does—lies like truth."

We heard the stenographer in the adjoining room close his desk, and knew that further work for the day was at an end, so we settled back in our chair, and with a resigned manner and a voice intended to convey boredom, said, "Well, though it is hard on your friends, we suppose that when these periodic attacks come on, you must get the poison out of your system; go ahead."

He read and talked for an hour, and all the time our interest grew, and after he had gone and left the book behind him—he afterwards declared that he had forgotten it—we took it up and read more. It was really very entertaining, and we became more and more impressed, and less and less censorious. These are the parts that interested us most—perhaps you are familiar with them:

You remember the general story? Sir Colenso Ridgeon has just been knighted in acknowledgment of having discovered a new treatment for tuberculosis. Any one at all acquainted with it can at once recognize it to be the bacterio-vaccination, controlled by the estimation of the opsonic index, invented by Sir Almroth Wright. Numerous medical friends call upon him to felicitate him upon his new honor, and await him in a consultation parlor of his house, where they fall into conversation, in the midst of which he comes in. It is worth while to read the whole play in order to get the full details about Mr. Cutler Walpole and the *"nuciform sac."*

Sir Patrick Cullen, one of the visiting doctors, opens up the matter thus:

> "Cutler worked hard at anatomy to find something fresh to operate on; and at last he got hold of something he calls the nuciform sac, which he's made quite the fashion. People pay him 500 guineas to cut it out. They might as well get their hair cut for all the difference it makes; but I suppose they feel important after it. You can't go out to dinner now without hav-

ing your neighbor bragging to you of some useless operation or other."

As the doctors talk, a woman whose husband is dying of tuberculosis of the lungs is waiting in an adjoining room, hoping that the newly created peer will be willing to give him the benefit of the new treatment.

Ridgeon now being present, the Mr. Cutler Walpole just mentioned comes in.

Walpole. "My dear Ridgeon, best wishes! Heartiest congratulations! You deserve it."

Ridgeon. "Thank you."

Walpole. "As a man, mind you. You deserve it as a man. The opsonin is simple rot, any capable surgeon can tell you; but we are all delighted to see your personal qualities officially recognized." He turns to his next neighbor—"Sir Patrick, how are you? I sent you a paper lately about a little thing I invented: a new saw for shoulder blades."

Sir Patrick. "Yes, I got it. It's a good saw; a useful, handy instrument."

Walpole. "I knew you'd see its points."

Sir P. "Yes, I remember that saw sixty-five years ago."

Walpole. "What?"

Sir P. "It was called a cabinetmaker's jimmy, then."

Walpole. Get out! Nonsense! Cabinetmaker be—"

Ridgeon. "Never mind him, Walpole. He's jealous."

Walpole. "By the way, I hope I'm not disturbing you two in anything private."

Ridgeon. "No, no, sit down. I was only consulting him. I'm rather out of sorts. Overwork, I suppose."

Walpole (*swiftly*). "I know what's the matter with you. I can see it in your complexion. I can feel it in the grip of your hand."

Ridgeon. "What is it?"

Walpole. "Blood poisoning."

Ridgeon. "Blood poisoning? Impossible."

Walpole. "I tell you blood poisoning. Ninety-five per cent of the human race suffers from chronic blood poisoning, and dies of it. It's as simple as A-B-C. Your nuciform sac is full of decaying matter—undigested food and waste products—rank ptomaines. Now will you take my advice, Ridgeon? Let me cut it out for you. You'll be another man afterwards."

Sir P. "Don't you like him as he is?"

Walpole. "No, I don't. I don't like any man that hasn't a healthy circulation. I tell you this: In an intelligently governed country people wouldn't be allowed to go about with nuciform sacs, making themselves centers of infection. The operation ought to be compulsory: it's ten times more important than vaccination."

Sir P. "Have you had your own sac removed, may I ask?"

Walpole (*triumphantly*). "I haven't got one. Look at me, I've no symptoms. I'm as sound as a bell. About five per cent of the population haven't got any, and I'm one of the five per cent." I'll give you an instance. You know Mrs. Jack Foljamb? The smart Mrs. Foljamb? I operated at Easter on her sister-in-law, Lady Gorran, and found she had the biggest sac I ever saw; it held about two ounces. Well, Mrs. Foljamb had the right spirit—the genuine hygienic instinct. She couldn't stand her sister-in-law being a clean, sound woman, and she simply a whited sepulcher. So she insisted on my operating on her, too. And by George, sir, she hadn't any sac at all. Not a trace. Not a rudiment! I was taken aback—so interested that I forgot to take the sponges out, and was stitching them up inside her when the nurse missed them. Somehow I made out that she'd have an extremely large one."

At this moment Sir Ralph Bloomfield Bonnington is announced, but does not appear. It finally develops that he has remained down stairs to talk with the lady waiting on behalf of her husband. As Walpole hears this, he jumps up and says with excited interest:

Walpole. "Oh, by the way, Ridgeon, that reminds me. I've been talking to that poor girl. It's her husband, and she thinks it's a case of consumption: the usual wrong diagnosis; these damned general practitioners ought never be allowed to touch a patient except under the orders of a consultant. She's been describing his symptoms to me, and the case is plain as a pike-staff: bad blood poisoning. Now she's poor. She can't afford to have him operated on. Well, you send him to me; I'll do it for nothing. There's a room for him in my nursing home. I'll put him straight, and feed him up and make her happy."

Shortly after this, Sir Ralph Bloomfield Bonnington appears and the conversation takes a new turn:

Sir R. B. B. "Aha! *Sir Colenso. Sir* Colenso, eh? Welcome to the order of knighthood!"

Ridgeon. "Thank you, B. B."

Sir R. B. B. "What, Sir Patrick! And how are we to-day? A little chilly? A little stiff? But still hale and still the cleverest of us all." (Sir Patrick grunts.) 'What, Walpole! The absent minded beggar, eh?"

Walpole. "What does that mean?"

Sir R. B. B. "Have you forgotten the lovely opera singer I sent you to have that growth taken off her vocal cords?"

Walpole. "Great heavens, man, you don't mean to say that you sent her for a throat operation?"

Sir R. B. B. (*archly*). "Ah, ha, ha! You removed her nuciform sac. Well, well. Force of habit! But n-e-v-e-r mind. She got back her voice after it, and she thinks you the greatest surgeon alive; so you are, so you are."

Walpole. "Blood poisoning. I see, I see."

Though we had read the whole play, our thoughts came back again and again to these lines as we walked to the hotel where we were to dine with a friend, and as we learned from him of the wonderful success a certain great man was having through the remarkable operations he performed upon a small organ, deeply seated and difficult to get at, and how the number of patients found to require the new operation was increasing at a remarkable rate, and the most unexpected surprises following it, we could not help reflecting in silence upon Walpole and the nuciform sac, and heaped additional curses upon the man who in writing about doctors had dared *"to lie like truth."*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
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Pittsburgh, Pa.

ENERGY

Why, at this writing (December 19) is the office of the Secretary in receipt of a generous percentage of the 1922 per capita tax from a very few of our component societies? Undoubtedly because at the November or December meeting of the county societies referred to, the Secretary or Treasurer made it convenient for their fellow members to pay in advance.

The enterprising county medical society secretary will always be found, at business or scientific sessions, equipped with receipts to be exchanged for "coin of the realm" in payment of annual dues. Proper consideration of the pleasure and profit of the secretary will inspire thoughtful members to remit by check, however, thereby permitting the secretary more time to enjoy other features of the society meetings.

In any event, the energy displayed by the various secretaries is reflected in the date and amount of their remittances to this office, and to the secretary we take pleasure in giving his or her full measure of credit.

We observe also that in most medical societies specific obligations to members and the more general public-spirited obligations to communities are met exactly in proportion to the energy displayed by the secretary. A good, live secretary energizes his fellow officers and members. Let us all meet the good secretary more than half way.

SERVICE

Opportunities for public health service are not limited to salaried representatives of health departments, but are available to all public-spirited citizens and especially to all doctors of medicine. These opportunities are not limited to early recognition of contagious diseases, with formal report of same and the subsequent observation of quarantine regulations by all concerned. To the public-spirited physician there remains the daily, if not the hourly opportunity for preaching and practicing prevention.

Do we on every suitable occasion champion the cause of vaccination against smallpox and diphtheria? Do we convey to parents and to individuals engaged in school work the blessed benefits of prevention; or do we wait for the inevitable results of indifference or neglect to remind us tragically of our failure?

This is a problem that can not be delegated to organizations or committees. What have you as an individual physician done to popularize the Schick test and the use of toxin-antitoxin to vaccinate the children under your care against diphtheria—the most unfavorable present-day item in the health record of the general public?

STREET CORNER REMEDIES

In former days the street medicine faker was wont to twang his banjo underneath his gasoline torch and dispense to his audience a mélange of cracked melodies, ancient jokes and almanac therapeutics. The up-to-the-minute development and outgrowth of the ancient individual faker and the more modern syndicated patent medicine distributor is the application of similar methods to psychology and psychotherapy as recently crystallized and epitomized by a former shining light among international quacks.

Elsewhere in this number will be found more specific references to this modern teacher. He was well established in Pittsburgh before the Allegheny County Medical Society discovered his record in "Nostrums and Quackery," published by the A. M. A.

Lecturers of this class operate in the larger cities only, and disdaining the gasoline torch of their earlier prototypes, advertise extensively in the daily papers. They give additional respectability to their calling by renting and appearing in halls usually sheltering high-class and instructive entertainments. Once established, by a series of "free lectures" sustained by the collection box method, the "doctor" or "professor" announces his paid course of instruction. "Easy marks" comprising the modern high-brow class, whose prototypes idled their time and money with the street faker of earlier days, crowd in to hear a smattering of psychology and theology loosely but fluently applied, and in like manner find themselves in the end buncoed.

AN OPEN SEASON

In counties and districts where midwinter railway and highway facilities are good, this should be an open season for Censorial District meetings and for visitation by Councilors from the State Society. Your Councilor should be to your county society a valued medium for exchange of sound medico-economic and medico-social ideas between your neighboring societies and your State Society. You will find the Councilor is in touch with the latest plans for influencing new legislation, as well as the present-day developments of former plans completed.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to December 16:

Allegheny: *New Members*—Thomas McCance Mabon, 510 Rosslyn Place; Homer W. Grimm, 741 Hazelwood Ave.; George R. Lacy, Singer Memorial Laboratory, N. S., Pittsburgh; Clarence B. Norcross, Clairton; Byron E. Shaw, Springdale. *Removal*—William J. Fetter from Pittsburgh to Scottdale (West. Co.); James B. McConnaughy from Pittsburgh to Rossiter (Ind. Co.).

Beaver: *New Member*—Joseph A. Helfrick, Midland. *Reinstated Member*—James I. Armstrong, Rochester. *Transfer*—Albert J. B. Pearce, Courtney, from Washington County Society. *Removal*—Francis H. McCaskey from Freedom to Rochester.

Berks: *Death*—Daniel W. Nead of Reading (Univ. of Penna., '81), Dec. 1, aged 63.

Butler: *New Member*—Charles S. McClelland, Butler. *Reinstated Member*—Ralph Christie, Conoquenessing.

Bucks: *New Member*—Raymond A. Leiby, New Hope. *Removal*—John S. Crater from Bristol to Jeddo (Luz. Co.).

Cambria: *New Member*—Ellsworth F. Arble, Carrolltown.

Chester: *Removal*—Clyde E. Ehringer from West Chester to 728 Franklin St., Keokuk, Iowa.

Clearfield: *New Member*—J. McClure Tyson, Dubois.

Cumberland: *New Member*—Creedin S. Fickel, Carlisle. *Removal*—Harold F. Lansche from New Cumberland to 608 E. Third St., Berwick (Col. C.). *Death*—Philip R. Koons (Jeff. Med. Coll., '79), of Mechanicsburg, Oct. 30.

Delaware: *Transfer*—Ralph E. Bell of Media from Fayette Co. Society.

Elk: *Removal*—Andrew L. Benson from Ridgway to Philipsburg. *Death*—Eben J. Russ (Geo. Wash. Univ., Wash., D. C., '61), of St. Mary's, recently, aged 81.

Erie: *Removal*—William K. Andrews from Waterford to Mill Village.

Jefferson: *Removal*—Harry A. Vosburg, Jr., from Tyler (Clear. Co. to Arnot, Tioga Co.).

Lancaster: *Death*—John J. Newpher (Bellevue Hos. Med. Coll., '81), of Mt. Joy, Nov. 8, aged 67.

Lackawanna: *New Members*—Royal Williams, 827 Green Ridge St.; Charles B. Gelbert, 826 Capouse Ave., Scranton; George F. Flannely, Dunmore; Murray Finkelstein, Olyphant.

Lawrence: *Death*—John D. Tucker (Jeff. Med. Coll., '00), of New Castle, aged 48.

Luzerne: *Reinstated Member*—Isaiah C. Morgan, Nanticoke.

Montgomery: *New Members*—Daniel E. L. Stedem, Narberth; John A. Logan, Hatboro; Anthony C. Messner, Ardmore; Howard E. Twining, Glenside. *Removal*—J. Warren Bauman from Lansdale to Ft. Dupont, Delaware; Katherine S. Hall from Ft. Washington to R. F. D. 5, West Chester (Chester Co.).

Northumberland: *New Member*—Ernest R. MacDonald, Keiser.

Philadelphia: *New Members*—Henry P. Webb, 920 Magee St., Fox Chase, Philadelphia; Edward A. Mullen, 221 Rochelle Ave., Manayunk; John M. Connelly, 1935 N. Fifth St., Philadelphia. *Deaths*—Franklin Mathews (Jeff. Med. Coll., '72), of Philadelphia, recently, aged 73; J. Morton Boice (Med. Chi. Coll., '04), of Philadelphia, Dec. 2, aged 45.

Schuylkill: *Reinstated Member* — Robert F. Weaver, St. Clair.

Washington: *New Members*—Francis A. Hare, 6 So. Main St., Washington; Ora F. McKittrick, Eldersville.

Westmoreland: *Death*—Albert A. Beacom (Univ. of Pgh., '03), of Kecksburg, Nov. 21, aged 46.

York: *Death*—David Strack (Jeff. Med. Coll., '87), of York, Oct. 5, aged 65.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since November 12. Figures in first column indicate county society numbers; second column, State Society numbers:

For 1921				
Nov. 12	Montgomery	152–154	7314–7316	$7.50
19	Philadelphia	2057–2059	7317–7319	7.50
23	Cumberland	43	7320	2.50
	Schuylkill	106	7321	5.00
29	Allegheny	1182–1186	7322–7326	12.50
30	Northumberland	61	7327	2.50
	Lackawanna	208–211	7328–7331	10.00
	Clearfield	66	7332	2.50
Dec. 2	Beaver	61	7333	5.00
7	Washington	128	7334	2.50
10	Cambria	127	7335	2.50
15	Butler	50-51	7336–7337	7.50
16	Luzerne	234	7338	5.00
	Washington	129	7339	2.50
For 1922				
Nov. 25	Bucks	1–35	1–35	175.00
	Beaver	1	36	5.00
Dec. 2	Beaver	2	37	5.00
3	Mifflin	1–5	38–42	25.00
6	Elk	1–2	43–44	10.00
10	Elk	3–7	45–49	25.00
15	Butler	1–2	50–51	10.00
16	Somerset	1–5	52–56	25.00
	Washington	1–10	57–66	50.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

212 N. Third St., Harrisburg, Pa.

CULTS

Like Tennyson's "Brook," which went on forever, of the making of cults and pseudomedical teaching and practice there seems to be no end. Recently there has appeared upon the horizon a new form of winning the public from recognized scientific medical principles in the treatment of human ailments, and it would seem as though the air is full of something new to attract the public attention in regard to health and disease.

We take the liberty of quoting from the *Pittsburgh Medical Bulletin* of December the following:

APPLIED PRESUMPTUOUSNESS

Elsewhere in this issue of the *Bulletin* will be found propaganda and information regarding one Orlando E. Miller, who has been lecturing on "Applied Psychology" for several weeks in the Allegheny County Soldiers' Memorial Hall. The advertising pages of the daily papers of this city have been generously patronized in behalf of this course of lectures. Some advertisements have been written in the first person; others have appeared as announcements by the so-called International Society of Applied Psychology. The newspapers of this city have been generous in their allotment of news space to Orlando E., and have featured his dream city in Mexico, where even the children from the day of birth are to be provided with an income. It is said that the lectures have been well attended, and that the contributions to the collection box have been generous; and, as will be noted, the lecture on December 5 placed his teachings on a tuition basis. News items indicate that this Affirmative Apostle of Intense Individuality" spoke before the Retail Credit Mens' Association and the Hungry Club. After you have read of "Dr." Miller's experience as a grocer, lawyer, editor, his experience as a manager or proprietor or president or exploiter of various cures for physical ailments common to the human race, you will probably not join in the enthusiastic reception extended to Dr. O. E. Miller by so many of your fellow citizens.

THE INTERNATIONAL SOCIETY OF APPLIED PSYCHOLOGY

announces

ORLANDO EDGAR MILLER, PH.D.

In two masterful addresses in Memorial Hall, Sunday, December 4, 1921. 11:00 a.m.—The Evolution of Love; 8:00 p.m.—How to Stay Young. Eternal Youth.

N. B.—Dr. Miller begins his class for Business and Professional Men and Women on Monday night, 7:30, on a Tuition Basis. In this class he teaches how to Read Character at Sight, Vocational Guidance, Salesmanship, Scientific Selection and Eugenics.—(Advertisement Pittsburgh Daily Papers.)

LIKE BANQUO'S GHOST
THE AMERICAN MEDICAL ASSOCIATION

announces

that The International Institute for the "Treatment of Tuberculosis" was a Chicago concern founded in 1908, and conceived and operated by one Orlando E. Miller. Miller had, at various times, been a grocer, lawyer, newspaper editor, proprietor of a "rupture cure," president of a "dope" sanatorium and exploiter of a "sand cure" for dyspepsia. In his "consumption cure" scheme he had one W. B. Forsythe as business manager and vice-president of the "institute." The *Journal of the American Medical Association* investigated the "institute," proved that over 80 per cent of its victims died under treatment, and, in general, turned the searchlight on the scheme. The matter appears in "Nostrums and Quackery" (1912). After the exposé the public heard nothing more of Miller for over two years. Then, in May, 1911, an article appeared in a New York paper stating that Miller had attempted to introduce his "consumption cure" in a hospital in that city. This attempt was defeated, due to the fact that the heads of the hospital board were familiar with Miller's record. In April, 1912, a London magazine published a special article exposing the details of Miller's operations in England. In October, 1914, Miller was sentenced to prison in London, after being convicted of having caused the death of a woman by administering a drug while she was a patient in his sanatorium. In 1920 Miller was back in America as the "Affirmative Apostle of Intense Individuality," lecturing on "Applied Psychology."—(Nostrums and Quackery, Volume II, A. M. A., 1921.)

A SUGGESTION

The Smoker tendered by the Philadelphia County Medical Society to the members and guests of the State Medical Society during the recent session, was first-class in every particular. The primary purpose of these smokers is to provide an occasion for the members to get together and mingle socially. The program as presented was so long that no opportunity was afforded for social visitations.

Attention of the County Medical Societies in the cities where future meetings may be held is invited to this fact, so that, when they arrange for such programs, there shall be ample opportunity afforded for such social diversion.

ERRATA

Our attention has been called to several errors, which occurred in the following articles appearing in the December number of the Pennsylvania Medical Journal.

"The Mechanical Aspects of Acquired Chronic Valvular Disease": Page 182, in line 12 of the opening paragraph, instead of the word "electrocardiograms," the word "autopsies" should be substituted, so that the clause should read: "Furthermore, autopsies do not always reveal sufficient damage to myocardium to account for death on that basis alone."

Under "Mitral Insufficiency," fourth line from the bottom of the first column of page 184, "stenosis" should be preceded by "marked," and the sentence should read: "Pain is rare in mitral insufficiency unaccompanied by marked stenosis * * *."

In the article "Some Thoughts on Fractured Long Bones; Their Replacement and Treatment," we note the following errors: The illustrations, Case 1, Figure 2; Case 2, Figure 1; and Case 2, Figure 3, should have been inverted, as the cuts were placed upside down. In the footnote of the illustration, Case 2, Fig. 2, the word "impartation" is used, whereas it should have been "impaction." Editor.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—Henry Stewart, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—John W. Bancroft, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—J. Hayes Woolridge, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. J. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederck R. Bausch, M.D., Allentown.
Luzerne—Walter L. Lynn, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Fred Wade Paton, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—O. M. Weaver, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—W. Gilbert Tillman, M.D., Easton.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—John J. Repp, M.D., Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percy E. Whiffen, M.D., McClure.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Martin E. Herrmann, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Homer P. Prowitt, M.D., Washington.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—J. F. Trimble, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

January, 1922

COUNTY SOCIETY REPORTS

ARMSTRONG—NOVEMBER

Whereas, It is proposed by the Congress of the United States to so alter or amend the Volstead Act, under the decision of Ex-Attorney-General Palmer and the rulings of the Treasury Department by Secretary Mellon, as to place the entire responsibility for the sale and use of wine and beer for alleged medical purposes upon the medical profession of the United States; therefore, be it

Resolved, That we, the members of the Armstrong County Medical Society of the State of Pennsylvania, in regular session, hereby voice our emphatic disapproval of any such travesty on the Eighteenth Amendment of the Constitution of the United States; and, be it further

Resolved, That we request our Representatives and Senators in Congress to oppose this ruling by proper legislation. And thus we will ever pray.

The Armstrong County Medical Society.

Endorsed Nov. 11, 1921, by the Mercer County Medical Society.

DAUPHIN—NOVEMBER

At the November meeting of Dauphin County Medical Society held at Harrisburg Academy of Medicine, Dr. Edgar S. Everhart, Associate Chief, Division of Genito-Urinary Diseases, Pennsylvania State Department of Health, Harrisburg, Pa., read a most interesting and instructive paper on "Treatment of Syphilis in the State Genito-Urinary Clinics, Pennsylvania Department of Health. In this connection Dr. Everhart said:

The history should be taken as carefully as it is done in conjunction with any other disease. Slipshod methods should be roundly condemned. It is the experience of everyone engaged in this work that once in awhile he is confronted with a patient who has been diagnosed as a syphilitic with little consideration for the patient and with too much enthusiasm on the part of the physician. In public clinic work, the clinician should be on guard against making a hasty diagnosis, inasmuch as he becomes so wrapped up in his work and sees so many cases of syphilis that, contrary to his better judgment, he considers every case as being syphilitic.

Recently, a man of intelligence consulted us concerning the possibility of his wife having paresis. He was greatly disturbed since he felt that he was responsible for her mental condition. This man had consulted a physician whose entire work was in the line of venereal disease. Careful questioning developed the fact that the diagnosis in the case of the man was made by methods which were so loose that to mention them would be to give severe condemnation. The patient consulted the doctor, who was a stranger, about some slight ailment. The doctor took his pulse, and without using a sphygmomanometer, told him his blood pressure was high and his arteries were hard. A Wassermann test was made with the result of a one-fourth unit plus. Based upon the evidence of a one-four plus Wassermann alone, the case was diagnosed as syphilis. The man received a number of administrations of arsphenamine. In the meantime, he returned to his home where he consulted another doctor concerning the condition of his wife's nerves. She was highly neurotic, and the doctor, acting upon the previous diagnosis of a syphilitic husband, told the man his wife was probably developing syphilis of the brain.

We advised him to take her to an alienist for examination. This was done and no signs of syphilis, either general or of the brain, could be discovered. The amount of mental suffering caused in this man's case is undoubtedly paralleled many times, where a diagnosis is made upon evidence as flimsy as this. Certainly no case should be diagnosed as syphilis upon the evidence of a one-fourth plus or a *single*, one plus Wassermann, without definite and undoubted signs or history of the disease. True, many a case of syphilis has developed without a typical chancre, yet where everything depends upon physical examination and the history, the diagnosis of syphilis should never be made without them. Thorough inspection of the entire body, the skin, the eye reflexes, knee jerks, scalp, nose, mouth, including lips, tongue, teeth, gums, tonsils and pharynx, should be made. Palpation of the cervical, axillary and inguinal glands should be done. A thorough examination, of course, should be made of the genital organs and the anal region. Palpation of the liver and spleen should be done to detect manifest enlargements. The heart should be thoroughly examined and the blood pressure recorded. All this should be done in all cases.

The typical Hunterian chancre is absent so often, that syphilis should not be excluded because the sores are multiple and are not indurated. Where the chancre is typical, there may be some excuse for not making a dark field examination, but in the presence of an atypical lesion, there is never any excuse for this neglect. A case should never be diagnosed as chancroid unless after repeated and painstaking efforts the treponema pallidum cannot be found. Inasmuch as the primary stage is the time when the patient is given a chance for cure, every means must be used to make a diagnosis then.

The complement fixation test is most helpful at this time. There is no fixed time for its appearance, but if the test is done every second or third day, it will eventually show positive in 90% of primary cases.

A provocative Wassermann, with a 0.3 gm. dose of arsphenamine is most helpful in hastening the appearance of the reaction.

Treatment. By far the most consideration in the treatment of syphilis is the maintenance of the patient's physical and mental condition at its highest point. To accomplish this, painstaking effort should be made to impress upon him the necessity for observing the rules of hygiene, which include abstinence from alcohol, sufficient exercise and outdoor life, moderate eating, regular bowel movements, and avoidance of all strains, mental and physical. Urinalysis is made and the weight recorded before treatment is started. Both are repeated regularly during treatment.

The drugs used are arsphenamine or neoarsphenamine, mercury, and sometimes potassium iodide in the tertiary stage. Arsphenamine is always used in the primary and secondary stages and also in the tertiary stage in the presence of manifest symptoms. Mercury is used in all stages. In using these drugs the utmost care should be taken and the patient carefully watched. With arsphenamine there is immediate risk, attended by symptoms which range all the way from flushing of the face to shock, collapse and death. The cause of these symptoms is usually the result of sudden liberation of endotoxins caused by the death of myriads of treponema pallidum. There may be flushing of the face, nausea and vomiting, palpitation, difficulty in breathing, syncope. This may develop within a few minutes or not before a number of hours. The injection of ten to twenty minims of a 1 to 1,000 solution of adrenalin chloride is of distinct benefit in helping the patient over the period of reaction.

Arsenic may have a deleterious effect upon the liver and the kidneys. In the case of the kidneys, the strain caused by the irritant, mercury, is increased by arsphenamine, with production in some cases of total anuria. Researches have shown that it has the effect of destroying tissue of the liver, which in most cases is repaired. Where the drug is administered without regard to its effect upon the liver, as shown first by bile in the blood, then in the urine, there may develop a serious form of jaundice which has in many cases gone on to death. For this reason, the urine should be tested repeatedly. In cases showing any intolerance at all for the drug, it should be tested for the presence of bile. When biluria exists, the dosage should be materially reduced and given at longer intervals. Sometimes it is not possible to give even the minimum dosage. Arsphenamine is contraindicated in conditions of depressed vitality, pronounced cardiovascular lesions with failing compensation, advanced nephritis (not syphilitic) and diabetes. Large doses should not be used during presence of advanced tuberculosis. The deleterious effects of mercury are too well known. There is always the necessity for careful watching of the patient, paying particular attention to the urine.

Mercury is an irritant to the kidneys and when used in conjunction with arsphenamine, the strain might be more than the kidneys can endure. The absence alone of albumin and casts is no proof that the kidneys are not being damaged. Mercury should never be pushed to the point of causing languor, failure in appetite, and a steady loss of weight. Patients should gain, not lose, weight. Erthema and dermatitis may develop which may go on to the exfoliative type. This is a serious condition, attended by long illness and in many cases by death. Hemorrhagic encephalitis, although rare, sometimes occurs and usually results in death.

In primary syphilis treatment is started: 1, when treponema are found; 2, when the Wassermann test is positive; 3, when an indurated sore appears which, under appropriate treatment, has persisted for several weeks or more. In some cases, the treponema are never found due to lack of skill, or because they have been obscured by the use of local applications.

Arsenic is administered in the form of arsphenamine and neoarsphenamine intravenously; mercury by inunction, fumigation, and muscular injection. In the primary stages arsphenamine is given in doses of 0.3 gm. and neoarsphenamine in doses of 0.45 gm. every five to seven days, a total of eight doses. Mercury—one dram of blue ointment or two drams of calomel ointment, 30%—is rubbed into the skin every day for six days with a rest of three days intervening. This is continued while arsphenamine is being used. At the end of this time a rest of one month is taken. A second course, consisting of one-half the dose used in the first course, is given. A Wassermann is taken and the results are recorded. At the end of six months, another Wassermann is taken. If positive, a course similar to the second is given. If negative, the patient is let alone, but given instructions to report every three months for Wassermann test, or sooner if symptoms develop. In this way the patient is watched for a period of at least two years. Upon reappearance of a positive Wassermann, a course of treatment is administered.

The secondary stage is treated in the same manner as the primary, except that twice the number of administrations, or sixteen, constitute the first course. The second course in the secondary stage is identical with that in the first stage—four treatments. In the tertiary stage, arsenic is used in cases with manifest lesions, in tabes, paresis, and other forms of cerebral involvement.

Treatment of hereditary syphilis is accomplished by 1, treatment of both parents before conception; 2, treatment of mother during pregnancy; and 3, treatment of the child. The mother should receive a course of intensive medication consisting of 8 to 16 doses of arsphenamine, along with mercury. The child should receive 0.002 gm. arsphenamine per pound body weight, every two weeks until four doses are given. It may be administered in sterile oil intramuscularly in the gluteal region. Mercury is given by inunction of one part blue ointment and three parts vaseline. The skin is first washed carefully and the dilute ointment rubbed in. Abdominal binder is then applied and changed every four days. The skin is washed every day before the inunction.

Technique of Arsphenamine Administration. If the avoidance of reactions is to be attained, the following three rules must be adhered to: 1, the injections must be given slowly; 2, the drug must be well diluted; and 3, thorough alkalinization must be done.

It is recommended that one minute be used for giving each tenth gm. of arsphenamine; 20 c.c. freshly distilled water should be used to each tenth gram of arsphenamine. The solution must be alkaline. By the careful following out of these points reactions will be reduced to a minimum. Faulty observance of one of the above will probably not cause much trouble. If two of them are disregarded, e. g., inadequate dilution plus haste in administration, reactions are much more prone to occur. Freshly distilled water is used since it obviates the development of germs, the dead bodies of which are not removed by sterilization. The protein resulting may be a potent cause for severe reactions. Each ampoule of arsphenamine should be immersed in alcohol to discover cracks in the glass, as shown by discoloration of the arsphenamine. Freshly prepared sodium hydroxide, 15%, is added drop by drop to the drug, which has been dissolved in the required amount of water, until the solution has again become clear. The patient's arm is prepared by painting with tincture of iodine and thoroughly washing with alcohol. A tourniquet is applied and the needle inserted. Care is exercised to see that the needle is inside, and has not gone through or entered one of the coats of the vein. If the syringe method is used, the piston should always be pulled back to allow a flow of blood into the syringe. If the needle is inserted independently, the blood should flow through the needle before the adapter is put into place. The tourniquet should be released before the flow of blood through the needle has stopped so as to make sure the needle is in the lumen of the vessel. The burrette is then raised to a point which allows the flow of 1/10 gm. of the dissolved drug per minute. Greatest care should be exercised in observing the way the fluid enters the vein and the flow shut off the first instant the escape of fluid into the surrounding tissues is manifested.

Interpretation of the Wassermann Test. Although the Wassermann, like many other laboratory reactions is not infallible, yet it has stood the searching test in millions of cases and has justified itself. The clinician who depends blindly upon the report from the laboratory makes a serious mistake, since in this as in all others, the clinician must in many instances weigh the evidence and form his conclusions after the case has been considered from all angles, clinical as well as laboratory. The laboratory man does not make the diagnosis. It is, therefore, necessary for the clinician to interpret properly the laboratory reports. Col. Craig in "Hazen's Syphilis" furnishes the following guide: "1. If the diseases other than syphilis that sometimes gives a positive result with the Wassermann test, can be excluded, four plus (Pa. Health Dept. Lab. one plus) reaction is diagnostic of the disease. 2. Under the same conditions, three or two plus reaction may, in primary, tertiary or latent infections, be regarded as diagnostic, provided there is a clear history of infection or clinical symptoms are present. In the absence of either a three or two plus, the reaction should not be regarded as diagnostic of the disease. 3. Diagnosis of syphilis should never be based upon a one plus reaction. Many perfectly normal individuals give this type of reaction and it is of no value in the diagnosis of the disease except that it should be considered as negative. 4. A single negative reaction where there is no history of infection and where symptoms are not present is of considerable value as corroborative of the absence of syphilis, but where there is any suspicion that the disease may be present, it has no eliminating value. The above is true of treated cases. A single negative reaction is of practically no value as indicating a cure. In such cases a provocative reaction should be made which, if negative, should be followed by a Wassermann upon the spinal fluid."

The Wassermann reaction may occur in the following diseases: leprosy, relapsing fever, yaws (a disease due to spirochetes), malarial fever during the febrile stage, diabetes when acidosis is present. The ingestion of alcohol may markedly influence the result of the Wassermann test, usually making the test negative when it would be positive. The Wassermann test is quantitative and there are so many factors entering into its proper performance that unless the greatest care is taken, and all steps carefully watched, there is always the possibility of error. This is one reason why the clinician should not always take for granted the result of a single Wassermann. The Wassermann reaction in the same individual varies from day to day. In cases of undoubted syphilis, the range may be anywhere from one plus to four plus when the tests are made daily.

The State Department of Health holds that the function of a clinic is to hunt out and bring to treatment the sources of infection. Individuals who are promiscuously distributing disease, must be sequestered, if by their habits and neglect of treatment they are not protecting the public health. Patients coming to clinics are questioned as to the source of infection. Wherever possible, the name of the person responsible for the infection is obtained. The person is sent for and examined. If the statement of the patient is substantiated, treatment either at the clinic or by a private physician is demanded. The difficulty encountered is in getting from patients correct names and addresses of "sources." A tactful and sympathetic attitude on the part of the clinician will succeed in a considerable percentage of cases.

It is felt that syphilis, as a public health problem in Pennsylvania, can be mastered. The attitude which the profession takes will largely determine whether this can be brought about. With the powerful weapon which they have at their command—arsphenamine—quickly to sterilize primary and secondary lesions of syphilis, the physicians of Pennsylvania can quickly subdue this disease, provided they lend their hearty and sincere coöperation to the State Department of Health. The physician owes it to society to make every effort to cut off the disease at its source. By reporting to the Department the names of persons who are promiscuously distributing infection, the doctor can render a service which is invaluable.

A regulation of the Department of Health promulgated in 1918, states, "It is hereby declared the duty of every physician when first attending a person afflicted with syphilis, gonorrhea or chancroid, to deliver to such person one of the circulars of information and instruction furnished him by the Commissioner of Health for the disease with which such person is afflicted. Any person * * * who shall wilfully fail, neglect or refuse to practice the precaution provided in said circular, is hereby declared to be a menace to the public health, and the State Department of Health or any local board of health is hereby authorized and directed to place such person under quarantine."

If physicians will comply with the law by reporting cases coming under the provisions of the above quoted ruling, and, in addition, endeavor to trace the source of infection, a tremendous impetus will be given to venereal disease control. By notifying the Department, untreated cases will be properly cared for in such a manner that it will be of benefit to the public and to the diseased individual. Undue publicity will be avoided except in the case of those refractory persons who cannot be handled in any other manner.

Self-disinfection by means of the immediate treatment (prophylactic package), has been approved by the State Department of Health. Preparations are submitted to the State Laboratory for examination. If they meet the required test for bactericidal power and nonirritating qualities they are given laboratory approval. The Department does not in any way condone immortality, but it faces the fact that the amount of venereal disease to-day is a serious menace to civilization and it behooves all public health agencies to use all means possible to reduce it. If the use of a safe antiseptic can in any way accomplish the result, there is justification for employing it, since unfortunately, venereal diseases bring their curse upon the innocent as well as upon the guilty. Physicians by informing their venereally diseased male patients as to the value of prophylaxis will accomplish much in reducing the incidence of venereal disease.

FRANK F. D. RECKORD, Reporter.

DELAWARE—DECEMBER

The December meeting of the Delaware County Medical Society was held at the Chester Club, Chester, on December 8th, Dr. George H. Cross presiding.

At this meeting the Society was privileged to hear Dr. George E. deSchweinitz, President-elect of the American Medical Association, his subject being "Travel Talks on Medical China and Japan."

Dr. deSchweinitz first spoke of the Imperial University of Tokio and its medical school. This is a very well equipped and modern school with a hospital of 693 beds, of which 240 are for medical, 180 for surgical and 30 for eye patients. The wards are well arranged and each department has its own laboratory. Here, as elsewhere in the East, one notices very many visitors to the patients and they become quite annoying. It is often impossible to operate unless a member of the family is present. The school has a high-grade medical course of four years. Prior to the war the teaching was in the German language and many of the teachers were German trained.

At Keijo, Japan, is a private university with a very modern medical school. The laboratories are very fine and the work of a very high order. The work in bacteriology and in tumor transplantation is particularly striking.

The Institute for Infectious Diseases is also very well equipped and all vaccines and sera are made there. One of the staff is the well-known bacteriologist, Kitasato.

The training in all Japanese schools is fine, the examinations are very strict and many of the graduates go to Germany, England and the United States for postgraduate work.

One of the interesting things noticed in Japanese hospitals, as in the temples, is that all the people remove their shoes before entering or else place over the shoes a large felt or cloth slipper. This makes for quiet and cleanliness in the hospitals.

In Korea the schools show markedly the Japanese influence. At Mukden is a medical school and hospital with a very good staff of English and Scotch physicians. This school is the result of the labor of Dr. Christy, who has been there for about 35 years. The wealth of bodies available for the dissecting room prompted Dr. deSchweinitz to inquire how they were so easily obtained. He was told that the bodies of all executed criminals were given to the medical schools, the method of execution being by shooting. As the former bandit Chiang rules this section with an iron hand and as there had been 30 executions the previous week, the abundance of bodies was explained.

The quarantine service at Nagasaki, Japan, is very fine. This is one of the finest and most beautiful harbors in the world. The quarantine station is located on one of the hills which surround the harbor and eight skilled bacteriologists are employed. The steamers going to Nagasaki usually make calls at Manila, Canton and Shanghai. There is considerable danger, therefore, of cases or carriers of cholera or other infectious diseases reaching this port. Before coming into port each passenger, of whatever class, is provided with a small wooden box in which to place a small portion of his feces. On reaching port these are immediately taken to the laboratory and examined for cholera vibrios. The steamer next calls at Kobe and by that time the results of the laboratory tests are known, and any cases or carriers can be detained by cable. The detention quarters are extremely comfortable and the quarters for first-class passengers are quite as nice as hotel accommodations.

Dr. deSchweinitz was a delegate from the American Medical Association to the opening of the Pekin Union Medical College. This College was founded by six English and six American missionaries. In 1915 an investigation by the Rockefeller Foundation resulted in the granting of money necessary to place this school on a high modern plane. The result is a beautiful and complete medical school and a hospital of 250 beds. The teachers are Western men but the staff is entirely Chinese. There are also exchange professorships. The school gives a premedical and medical course, and all the teaching is in the English language. There are abundant provisions for research work. The school was built with three purposes in view: to provide a good modern medical education at home for the Chinese, available postgraduate instruction for medical missionaries and to encourage research. Dr. deSchweinitz spoke in the highest terms of the medical missionaries.

At Shanghai is located St. John's Hospital, which is partly supported by the Y. M. C. A. of the University of Pennsylvania and on whose staff are several Pennsylvania graduates. This institution is primarily intended for general medical work, and research is not stressed.

In speaking of the old native doctors and pharmacists of China Dr. deSchweinitz told many interesting things. The prevalence of disease is readily understood when one hears that the only fertilizer is human excreta, which is peddled about as any other commodity. The mass of the people are very ignorant and reluctant to adopt new ideas. The presence of many parasitic diseases renders these two factors potent in the spread of such conditions. Flukes are very common.

The Chinese pharmacopeia contains over 2,000 remedies, among which are roots, seeds, animal and mineral derivatives, and others of a great variety of sources. Even glandular extracts are used, as is well illustrated by a man who was observed throwing frogs into a stream. On being questioned he said he had removed the parotid glands from the frogs and now was returning the frogs to the water, as the people do not believe in killing animals. From the parotid glands he expected to make a medicine.

At Hangchau is an enormous storehouse where Chinese medicines are sold. Deer are kept here to provide powdered horn, to be sold as a tonic. The company has salesmen who sell for them much as does the detail man in this country. They are diagrams of the human body, on which the patient may indicate the location of pain, and for which the company sends a plaster to be applied to the painful area. One sees many people wearing these plasters on various parts of the body.

In the Chinese temples, near the entrance, is placed a small fount containing water. In this the worshippers bathe their eyes. One does not wonder why in certain parts of China 53% of the people have trachoma. Also in the temples there are charts from which the worshipper, after praying, picks out a peg with the number of the remedy needed to cure his affliction.

This talk of Dr. deSchweinitz was most interesting and was thoroughly enjoyed by the 42 members present. Following the meeting Dr. Cross entertained the Society and its guests at dinner.

Geo. B. Sickel, Reporter.

HUNTINGDON—DECEMBER

The Huntingdon County Medical Society met at the Huntingdon Club, Thursday afternoon at 2:30 o'clock, December 8th, with the president, Dr. H. C. Wilson, in the chair, and the following members present: Drs. Beck, Doebele, Sears, Frontz, Harman, Richards, Brumbaugh, Morgan, Koshland, St. Clair, Hutchinson, Simpson, Plymire and Keichline and Dr. D. W. Davis of Six-Mile-Run.

The following officers were elected: President, F. R. Hutchinson; Vice-President, F. P. Simpson; Secretary, J. M. Beck; Treasurer, G. G. Harman (this is the 31st year Dr. Harman has been elected to this office); Censors, J. R. St. Clair, C. G. Brumbaugh, C. R. Reiners; Editor and Reporter, J. M. Keichline, Jr.

The Program Committee outlined a splendid program for the coming year. The January paper will be on Diphtheria Immunity. Suggestions in regard to discussions were freely given and we hope this feature of our meetings will become more valuable.

Dr. Frontz gave a talk on smallpox vaccination and the present status of diphtheria regulations. Dr. I. S. Plymire's transfer from the Buck's County Medical Society was received and accepted.

Dr. St. Clair reported two chiropractors practicing in Huntingdon who are not registered and that if anything is done we will have to do it and that a fine of $1.00 would probably be the result, after which they could continue to practice as before. The only practitioners that can be soaked by the courts are bona fide legal practitioners.

Dr. Wilson, in his address, commented on the good attendance, the help the society is to the members who do attend, and that every physician should be an active member of his county society. "If we do not hang together we will hang separately." Dr. Doebele presented resolutions in memoriam to the late Henry Clay Chisolm, M.D. J. M. Keichline, Jr., Reporter.

MERCER—NOVEMBER

The regular meeting of the Mercer County Medical Society was held in the assembly room of the Penn High School at Greenville on Thursday evening, Nov. 10, 1921. As the president, Dr. A. M. O'Brien, was absent, having gone to Washington, D. C., for Armistice Day, Dr. R. M. Hope of Mercer, presided.

The Society adopted the resolutions drafted by the Armstrong County Medical Society on the Volstead Act. The history of the Mercer County Medical Society from its beginning to the present date was read, but was not corrected at this meeting. Plans have been made for a banquet in December.

There were meetings in the different localities of the county during National Cancer Week, and some of our able men spoke on the subject.

M. Edith MacBride, Reporter.

MIFFLIN—DECEMBER

On December 3d, the annual election of officers by the Mifflin County Medical Society was held in the parlors of the Coleman House at Lewistown, the following officers being elected: Dr. W. H. Kohler, president; Drs. C. M. Johnson and H. S. Alexander, 1st and 2d vice-presidents, respectively; Dr. J. A. C. Clarkson, secretary-treasurer-librarian; Dr. F. A. Rupp, reporter.

The program committee, Dr. Rupp, chairman, reported the new program for 1922, which was adopted by the society. The annual banquet will be held on the evening of January 5, 1922, at which the retiring president, Dr. J. S. Mitchell, will deliver an address. The annual dues of $7.00 will be retained for the new year. All meetings of the Mifflin County Society are held in Lewistown unless otherwise mentioned.

F. A. Rupp, Reporter.

MONTOUR—NOVEMBER

The regular monthly meeting of the society was held at the Geisinger Memorial Hospital, Danville, on Friday evening, November 18th, and was called to order by the president, Dr. R. A. Keilty, at 8 o'clock. The following were present: members, Drs. H. L. Foss, R. A. Keilty, Reid Nebinger, E. A. Adams, J. A. Jackson, G. B. M. Free, L. R. Chamberlain, Cameron

Shultz, E. T. Williams, P. C. Newbaker and J. H. Sandel; visitors, Drs. J. H. Focht, S. P. Tipton, medical missionary to Korea; A. B. Vastine, D. D. S., and Mr. Robert Froberger.

A communication from the Editor of the Journal was presented, urging the members of the society to give greater attention to the advertisements in the Journal, in order that the advertisers may enjoy better results therefrom and thus be encouraged to continue to use the Journal as an advertising medium. A communication was also received from the Chairman of a Committee of the Trustees, asking aid in their survey of nursing conditions, with questionnaires enclosed. On motion it was agreed that each of the two hospitals and the secretary make reply and furnish such data as was available.

Upon a favorable report of the committee having the matter under consideration, it was decided to publish a four-page monthly bulletin in connection with the meetings of the society. The secretary, J. H. Sandel, was chosen editor, with the president, R. A. Keilty, as associate editor; the name of the publication to be "The Bulletin of the Montour County Medical Society."

A scientific program of three subjects was arranged for the evening. Dr. R. A. Keilty presented an able paper on "Blood Transfusion, From a Laboratory Point of View." He stated that there were two classes of cases in which blood transfusion was especially valuable: emergency cases, such as severe hemorrhage or shock; and diseased conditions, especially pernicious anemia. And because of the good results usually obtained, transfusion should be taken advantage of more often than has been done heretofore.

In order to attain success, the cases, as well as the donors, must be selected. The donor must be carefully chosen; he must be healthy and free from blood disease; and in order to ascertain this he must be serologically tested. The donor and patient must be mated, each with one of their known group. There are four groups, which are, naturally, numbered one, two, three and four. A donor of group four may be regarded as the universal donor, and his blood may be given to anyone. Those of other groups are to be mated together; that is, a donor of group two with a patient of group two, and a donor of group three with a patient of group three, etc. Groups two and three are opposites and must not be used together (that is, a donor of group two with a patient of group three); they are incompatible. To assure success we must learn the group to which the patient as well as the donor belongs, and mate them with respect to their blood agglutinates. At the Geisinger Hospital, out of 52 patients in whom blood transfusion was indicated, 35 were transfused. In all, 101 transfusions have been done. Out of 242 donors only 112 could be used, or could be mated individually. Donors for group two are most often needed. Blood transfusion is a standardized procedure, but the cases must be mated individually.

Dr. Nebinger, in discussing, emphasized the practicability of transfusion, and cited a case of severe hemorrhage in which he was satisfied that a life had been saved by a transfusion.

Dr. Reid Nebinger followed with quite a practical paper on "Suppurative Otitis Media; Its Relation to Tonsil and Adenoid Disease." He stated that the average physician and the laity, regarded the "bealed" ear, or middle ear abscess, much too lightly, and that too often such cases are treated in haphazard fashion. Every acute middle ear case is a potential mastoid, or has at least, antrum involvement. Four to six weeks is the so-called acute period, although some cases are chronic from the start. The real chronic cases, or those covering a period of from six weeks to years, present an entirely different problem. Here we have to deal with not only a mixed infection, but also with granulomata, bone involvement, and inadequate drainage. These cases all have chronic mastoiditis of some degree.

During his service, at the eye, ear, nose and throat department of the Geisinger Hospital, the total number of cases coming with only ear complaints, at the time of the first visit,, is 224. Of these, 123 were for some suppurative condition. Forty-eight of these were considered acute, and 76 were chronic. Roughly speaking, 40% of all cases applying for ear treatment had a suppurative condition, and it would seem that a great many of them could have been prevented.

If you are at all familiar with the anatomical relations of the nose, nasopharynx and pharynx, it will become apparent that the nasal end of the eustachian tube is fairly contiguous with all of these structures. Simple enlargement of the pharyngeal tonsils, constituting adenoids, acts as a mechanical obstruction to drainage and ventilation of the tube and the middle ear, especially if the adenoids are large or if they encroach upon Rosenmuller's fosæ. In such cases it only requires some acute infection, as coryza, measles, etc., to infect the tube, and by continuity the middle ear. If in such cases, free paracentesis, repeated if necessary, fails to stop the discharge in two weeks, the chances are that hypertrophied tonsils and adenoids, are preventing the healing and should have immediate attention to prevent chronicity of the ear affection.

There is another class of cases that should be mentioned with the adenoid group, namely, those of nasal obstruction from any cause, usually deviated septum, or polypoid degeneration of one or more of the turbinates. It is evident that removal of the tonsils and adenoids, no matter how thoroughly done, will not relieve this class of patients. Now how should these cases be handled? To begin with, every case of earache should be investigated. Many of them are due to impacted wax which can be removed. Another group is due to temporary tubal catarrh, incident to an acute coryza, and an inspection of the drum reveals the nature of the condition. We must conclude that there are many cases of benign earache, but they should be proved early, in order not to miss the serious case until too late to prevent suppuration.

Here the writer digressed to say that he believed every physician should be able to examine an ear and say whether the drum is red, bulging or quiesent. We are too apt to think that an ear is getting sufficient drainage because it is discharging freely, but going into the history of these cases, we find they are still having pain in the ear and tenderness over the mastoid antrum. This calls for free incision of the drum from top to bottom, usually posteriorly, in the hope of preventing a mastoid. Many times only a serous bloody discharge appears, which later may become purulent. In this instance we have forestalled pus in our treatment of the case. The question of irrigating these cases often comes up, but unless it is carefully done, it may do more harm than good.

In chronic cases much care should be taken in searching for those things which help to prolong the discharge. Very often the contributing cause will be found in the nose, or in a chronic throat infection. In many cases, however, the cause will be found in the ear itself. The most common are granulomata, caries of the ossicles and bony walls, and chronic mastoiditis. The main object in treatment is to keep the ear clean and apply all measures possible to stop, or at least reduce the amount of the discharge. Many of these chronic cases are only curable by some radical operation, which in some cases, is apt to result in reduced hearing; hence it is often best to treat them on the expectant plan.

The following conclusions were urged: 1st, Early and full investigation of all cases of earache. 2d, Energetic and persistent treatment of all acute cases. 3d, Careful examination of the nose and throat and proper procedures as indicated. 4th, Expectant treatment in chronic cases, but none the less energetic and complete. 5th, Remembering that from the chronic cases come the fatal cases, and that all of these unfortunates were once acute and curable cases.

Dr. Keilty, in opening the discussion, said that these chronic cases almost invariably lead to mastoid disease, and thus become foci of infection. In the autopsies he had conducted, nearly 50% had shown pus in the mastoid antrum or cells.

Dr. Sandel recited a case of a man, farmer, with a history of occasional seizures resembling epilepsy, in which there was evidently an acute exacerbation of a chronic middle ear condition. A paracentesis was done and attention was given to a catarrhal condition of the nose and throat, which resulted in the relief of both the ear affection and the seizures.

Dr. H. L. Foss completed the program with an interesting talk on "The Surgical Treatment of Fractures." He stated that most fractures could be successfully treated nonsurgically. There were cases, however, where there would be extensive overlapping of the fragments, or the interposition of muscle or fascia which made surgical interference necessary. It was then best to cut down upon the seat of fracture, bring the ends of the bones in apposition, and hold them in place with Lane's plates. He said that when Lane's plates were first used they were made of poor material and gave considerable trouble through irritation due to corrosion, but they are now made of vanadium steel, which can be shaped and adapted to the various shapes of bones, and are satisfactory. Lane's plates must, of course, be removed after good union has been secured. Beef bone plates and screws have also come into use and are intended to replace steel plates. These are subsequently absorbed and need not be removed. Quite a number of x-ray plates of fractures, before reduction and after the plates had been applied, were shown, which emphasized the excellent results obtained. He stressed the need of avoiding infection in the treatment of bone cases.

Dr. Newbaker, in discussing, cited the case of a man whose leg had been run over by the broad tired wheel of a heavy farm wagon, causing a comminuted fracture, which he had treated with a satisfactory result.

J. H. Sandel, Reporter.

NORTHAMPTON—DECEMBER

The Medical Society of Northampton County held the last meeting for the year at the Kurtz Restaurant in Bethlehem, on Friday, December 16th, at eleven in the morning. The attendance was far beyond expectations; in fact the attendance all the year has been greater than any previous year, showing that the physician is beginning to appreciate what the county society means to him.

Dr. Charles E. Meixsell of Northampton was elected to membership.

Dr. Walter D. Chase, of Bethlehem, read a very able and instructive paper on "Diseases of the Accessory Nasal Sinuses," illustrating the paper with charts and a skull. After a short discussion, a hearty vote of thanks was extended Dr. Chase for his very excellent paper.

The next meeting will be held on the third Friday of January, which will be the annual meeting, at which time the officers for the year 1922 will be elected.

Luncheon was served at the expense of the Society and the meeting adjourned.

W. Gilbert Tillman, Reporter.

WARREN—NOVEMBER

On November 21st the Warren County Medical Society met in the Elks' parlors. A communication from the local temperance organization, requesting the members to refrain from issuing prescriptions for liquor, caused considerable discussion, and the matter was dropped without action. The physicians have not prescribed liquor to any great extent; only a few have taken out a permit, and of those a number have issued only a small proportion of the original one hundred blanks.

Dr. Paul Stewart gave a brief description of the symptoms of lethargic encephalitis, and gave a clinical history of a case coming under his observation. He believed many cases are unrecognized. Dr. Weston reported that at least six mild cases have been seen by him during the past year. Dr. Gail Hamilton called attention to the fact that instead of coma or lethargy, some cases showed great restlessness, excitement and even delirium. The symptoms vary with the portion of the brain affected.

Dr. Weston then gave a review of osteopathy as laid down in Dr. Still's book. He read extracts from the book and showed the absurdity of the pathology taught by the founder of this cult. According to Still, the cure of everything from cataract to eczema is as simple as can be. Adjustment of vertebræ, relief of pressure on nerves, mechanical adjustment, are all that is required. Treat the body like an engine. Medicine has gone through many strange phases. In our orthodox schools we teach theories that to future practitioners will sound as absurd as many advanced by the ancients sound to us. If the so-called new cults have anything of value, there should be some clinic where they can be subjected to clinical test. Regular medicine is and should be receptive to all new ideas. There is so little that we know about the most common of ailments that we should welcome any help from whatever source it must come, and be willing to submit to test. The so-called wonderful discoveries are usually mere cloaks to permit unprepared or poorly prepared persons to practice medicine. The medical organizations should investigate the claims and make known the pretensions of all who purpose to teach a new healing science. We should know something about these cults if we are to fight them. If every so-called diagnosis of a dislocated vertebræ could be subjected to an x-ray examination, there would be fewer such diagnoses, but all the fallacies are not outside of regular medicine by any means.

The Society was treated to a fine chicken dinner by Dr. Africa.

M. V. Ball, Reporter.

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ADDRESS

AMERICAN SURGERY*

ELWOOD R. KIRBY, M.D.
PHILADELPHIA

In calling to order the Surgical Section of the seventy-first session of the Medical Society of the State of Pennsylvania I am sure I shall be doing nothing more than reminding you when I refer to the great principles which this section stands associated to promote. We can look back upon a period of great stress and test. There never was a time when we needed more clearly to conserve the principles for which American Surgery stands than this present time. We have been weaned from the old world, from which prior to 1914 our inspiration, if not our methods, was drawn. Having therefore learned to stand apart we have grown conscious of nothing so much as our own powers, resources and possibilities. Our future assuredly holds to the world an invitation, a cordial greeting, perhaps to advantage a partially closed door, but never a hostile front. How then shall we approach this new order of things? As I see it, there must be no difficulty so great, no truth so obscure, no problem so involved that American surgical resourcefulness cannot and will not solve it. The occasion is not opportune for me to refer in detail to the varied program necessary to maintain this supremacy, though it seems, as a prerequisite, that a radical revision of the *method* of postgraduate opportunity must be made. To limit such teachings to the great medical centers is not enough; they must be encouraged by establishing and maintaining centers throughout the country, even in the smaller cities, for convenience will be found of paramount advantage. In going forward we must rightly conduct the search, continuously struggle to adjust it and by vigilance retain it; and out of this will result reward proportioned to the breadth of our initiative and the depth of our logic.

There is no fact more universally admitted by the medical profession, than that surgery has supplanted medicine in the treatment of a very large group of cranial, abdominal and thoracic affections. This revision must of necessity demand in the very near future, if not at once, enlarged hospital accommodations and facilities, with the open door for all practitioners who are capable and worthy. This demand must be met in some form, or the graduate of the morrow, so well equipped to contend with the disorders of society, shall find a lack of opportunity to employ his talents. May I remind you of the dangers of such a situation, planting indolence through influence? Not to grieve over the fall of these able young men for lack of opportunity, is to drive the intelligent into disgust and genius to despair. This liberal revision of hospital practice would redeem many great capacities, which without such, die, withered for want of moisture like seeds on stony ground. This subject has too long been discussed, precise formulas have been applied, prompt and spontaneous resolutions offered, all of which are impressive, but not serviceable. To discuss, compare and weigh will not prevent failure; dissertation must not stand in place of action. It gets us nowhere and finally fastens on us like the crab grass that sprang from Sheridan's Cavalry Camp.

It occurs to me that the problem of both open hospital and postgraduate teaching could be readily solved through committees appointed by the component societies of each state organization, each state acting independently of the others, at least for the present. For it is my conviction that the profession as a unit alone has the right to establish that standard which gives to each graduate the largest measure of opportunity for applying the complicated details of a surgical practice. Such a program cannot be made full and complete if a group of self constituted arbiters be allowed either to promote or maintain it, for from the onset there would be established a precedent for making over, as well as holding up those advantages and privileges that should go primarily to the many. I fear that there is already in our midst a group of such arbiters, whose interest is less for the professional weal than for personal aggrandizement. With me, it is a conviction that seldom can one serve at the same time the profession's welfare and his personal advantage.

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*The Chairman's Address, delivered before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

May I repeat that all policies, both of revision and addition, designed for the progress and betterment of our profession must, if they are representative, be sponsored by the state societies through committees composed of members from the component county societies. A stake thus played for will not only be won, but will conduce to the benefit of all. With the machinery so working no policy would be allowed to pass approval that brought either inequitable opportunity to the majority or intolerable imposition on its individual members. The proper spirit is that which recognizes the majority of the profession as alone competent to accept all that is just and desirable and to reject all that is undesirable without practical control by any individual or minority group of individuals.

Let us not delay progress by discussion, nor assign action to the few, but together strive to provide the largest advantage for the many.

ORIGINAL ARTICLES

NASAL ACCESSORY SINUS DISEASE: REPORT OF 150 CASES IN ADULTS AND CHILDREN COVERING A PERIOD OF TWO YEARS*

JOHN J. SULLIVAN, JR., M.D.
SCRANTON

In looking over reprints of mine on conservative treatment and operation on the nasal accessory sinuses, I came to the conclusion from the various discussions of the papers, that I had not made myself very clear. A good many of my colleagues and friends seemed to receive the impression that I was advocating the internasal method in preference to the so-called radical procedure. This is not exactly the case; my plea is for the conservation of the nasal anatomy wherever that is possible. That is, instead of following the universal habit of removing the inferior turbinate bone in the internasal operation for draining the maxillary sinus, we conserve the same. I can honestly say that we have not removed an inferior turbinate in any of our maxillary sinus operations, radical or internasal. We do not remove the middle turbinate either to drain the frontal sinus, to exenterate the ethmoid labyrinth or to open the sphenoid, unless, in rare cases, it is so badly diseased that it does not functionate or that it does not resume its normal appearance and obstructs drainage or causes pressure even after the cells are exenterated.

I still do the radical operation on the nasal accessory sinuses whenever it is necessary, but I reserve the right at least to give my patient the chance to recover by simpler methods, if they do not in any way endanger the health or life of the patient. We must always remember that it is much better to have a scar than a funeral, and not delay radical measures until too late. We must use a little horse sense.

I have not departed one small fraction from my method of treatment or operation, since the publication of my paper before this body several years ago at the last Scranton meeting. My results since that time have been enough to justify me in keeping up the good work. I have not referred to the cases of "Optic Neuritis" because the whole matter of diagnosis, etc., will be fully covered by Dr. Redding's paper. He sent the nerve cases to me fully diagnosed and with a note requesting me to operate. I give him full credit, when I say that very few, if any, gave apparent signs to causal observation and it was only after repeated examinations that I could bring myself to go ahead and exenterate the ethmoid labyrinth and in many cases remove the anterior sphenoidal wall. The x-ray in these cases gave little or no help, except in the matter of mapping out the field of operation.

We must remember that the rule that applies to a chronic catarrhal deafness that stubbornly resists treatment unless you correct any nasal abnormality, deflected septum, etc., or diseased tonsils or adenoids, applies to a nasal accessory sinus disease. We have made no change in our routine method of examination, namely:

(1) Examine the nose before and after contraction (cocaine and epinephrin).

(2) Syringe the nose with normal salt solution, collecting the return fluid in a black basin. If pus has been present, look for its reappearance.

(3) Transillumination with my frontal sinus and antrum light.

(4) Roentgen ray, and compare with transillumination markings of the sinus. The sinus is marked off in the dark room and the results compared with the plate. In transilluminating the sinus, start low on the rheostat and gradually increase the light. This conserves the life of the lamp and at the same time gives a better idea of the part examined.

(5) Position (Escat), head down, side examined uppermost. I have seen this give pus also from the opposite, or lower maxillary sinus, where it was filled to overflowing. (a) Head upward, erect and erect slightly backward for the frontal sinus; (b) Head forward on the chest for the sphenoid; (c) Anterior ethmoids

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

will sometime give pus in the sphenoid position; (d) Posterior ethmoids, head skyward in the prone position. These positions help a great deal.

(6) Puncture and irrigation of the maxillary sinus under the inferior concha. I do this in all suspected cases of sinus disease and in all cases of involvement of the other sinuses. After the puncture I pass a probe through the puncture opening and examine for thickened membrane, etc.

(7) To examine the ethmoid and frontal sinuses, cocainize and epinephrinize the middle concha, the septum opposite to it, the external wall of the ethmoid as much as possible. Infract the concha with a blunt elevator or Sullivan turbinate infractor. Examine for thickened membrane with a probe. Note the general appearance of the cells. Trace pus if present. Probe frontal sinus gently and wash out if there is any suspicion of disease.

(8) Unless symptoms are very apparent, it is very difficult to make a diagnosis in disease of the sphenoid sinus and posterior ethmoids, and then only after removal of the middle concha. Again the probe should be the factor in trying to locate the sinus (sphenoid) opening. It is impossible at times to differentiate between disease of the posterior cells and the sphenoid. Given a suspected case it is always due to lack of drainage. The concha or deflected septum is at fault. I think it is good surgery to remove at least the obstruction. Then the sinus can be more easily examined. The Killian long speculum or Sullivan infractor is a help in the examination of this region. We have not removed the middle turbinate in examining the sphenoid or posterior cells. Infraction is all that is necessary. Removal is the exception.

(9) Suction should be used for all sinuses.

We should not put too much confidence in any one clinical sign. It is the group of findings that complete the picture. One word about the roentgen ray: I have seen the plate show a clear, healthy, dark sinus, and on operation have found a sinus filled with polypoid masses. Again, a plate may show trouble in the frontal sinus, where there is little or no disease. It is well to have several plates made in doubtful cases.

Symptoms referable to patient and differential diagnosis can be found in any textbook. The patient may have pain anywhere in closed empyema or a vacuum pressure. Often the pain simulates frontal sinusitis; less often, sphenoidal trouble. Dripping in the throat, chronic coughs and laryngitis are frequently due to maxillary pus. Transillumination and the roentgen ray are an aid to diagnosis. In every case wash out for three weeks or more previous to operation.

After puncture it is the general rule to blow air into the sinus. It is said no squeak means no pus, or vice versa. In a closed sinusitis (maxillary) it sometimes requires a great force to get even a few drops of the irrigating material away. In these cases the blowing of air into the sinus is of no value. The passing of a probe into the sinus shows only slight thickening of the lining. It is not filled with pathologic tissue, so that cannot account for the force required. Your cannula is not blocked. We then look to the normal ostium as the site of our trouble. If you cannot reach the normal opening, puncture above the inferior concha, 4 mm. above and about 20 mm. back of the anterior end. I use the small size frontal sinus rasp, gradually enlarging the opening with different sizes, biting away loose tissues with the ethmoid forceps. This gives an opening through which I can irrigate if I find it necessary. Several cases which had pus in the sinus gave no squeak. This was due to the pus being so thick that, after washing, it came away in one piece.

Ten years ago, we were doing at least on an average of ten radical maxillary and five Killian's a year. During the last five years we have had five Killian's and about the same number of maxillary (radical) out of at least over 500 mixed sinus cases.

Howard V. Deitron (Laryngoscope, May, 1921) states that a good many infected antra go untreated, because of the absence of subjective symptoms. He refers to instances in which the middle turbinate, together with the ethmoid labyrinth, had been removed by an extensive operation for cure of what seemed to be an ethmoiditis, but which later proved to be really a maxillary sinusitis. He further claims to have seen many cases of what to the casual observer seemed to be ethmoiditis clear up, following a radical operation on the maxillary sinus. Only a limited value is accredited to the trochar and irrigation for diagnostic purposes. I have made the same observation in a number of cases. A pseudo-ethmoidal condition is caused by the mechanical factor of the ostium maxillae and irritation of the pus to the ethmoid labyrinth. I have seen polypi disappear after a maxillary drainage, just as I have seen ear polypi disappear after adenoid removal. I cannot agree with him as to antrum puncture and irrigation not being a diagnostic measure. His observation as to the order in point of frequency (first, maxillary; second, frontal; third, ethmoid; fourth, sphenoid), is about the same as mine.

Francis P. Emerson (Laryngoscope, May, 1921) believes that many maxillary sinus cases are overlooked because of the lack of symptoms that direct attention to the antrum. He suggests that in every case of long standing polypoid degeneration of the ethmoid region, operative interference should be followed by careful inspection of the antrum. Whenever a residual gelatinous mass is washed out of this cavity, one may expect to find degeneration of its lining membrane.

We were surprised at the number of children who had a maxillary sinusitis, that was overlooked. In an examination of over 1,000 children, we readily bear out Dean of Iowa, in his observations that very few of these cases drift on to operation on the sinuses if their adenoids and tonsils are removed and conservative treatment continued and kept under observation for at least six months to a year. Dean mentions the infraction of the inferior turbinate and the drainage of the maxillary sinus in the child. In severe epidemics of "Flu," especially of the streptococcic type or secondary infection, treatment by suction, etc., does not clear them up and they tend to chronicity if not given immediate drainage, and a good many go on to more radical procedure. One of these so-called "Flu" cases, that had a Denker on her left maxilary was caused by a pseudodiptheritic organism. I mention this as a point of interest. Her maxillary sinus was completely filled with polypoid material and pus. Culture also at time of operations gave a pseudodiptheritic organism. After removal of tonsils and adenoids in children, who have a maxillary sinusitis, we place them on argyrol 10 per cent, dropped into nose three or four times a day, and suction if possible. Where there is very much pus on Escat position and dark on transillumination, we usually infract the inferior turbinate and make a fairly good opening with a rasp, under the inferior turbinate.

TABULATION OF CASES

Maxillary sinuses, bilateral	108
Right maxillary sinus	12
Left maxillary sinus	6
Frontal with involvement of antrum and ethmoids	3
Frontal radical, single, right	2
Ethmoid double	7
Ethmoid single	8
Sphenoid	6
Radical maxillary, right	1
Radical maxillary, left	1
Radical maxillary, bilateral	5
Cases relieved by treatment	30
Cases relieved by conservative treatment	82
Cases unrelieved	15
Cases did not continue or that were sent for diagnosis only	20
Cases of subacute otitis media suppurative, caused by sinus disease, cured by suction	5
Chronic laryngitis	6

REPORT OF CASES

(1) Mr. T. E. E.: Had "Flu" 3 or 4 weeks, followed by acute suppurative otitis media bilateral. Complained of pain over left eye to top of head. Sinuses: left frontal medium, right frontal small, right maxillary sinus dark. (2) Pus in right olfactory slit. (3) Escat left; pus in sphenoidal region; escat right, pus in sphenoidal and middle meatus. Suction 10 minutes, pus from both sphenoids, large amount. Punctured both maxillary sinuses and found a large amount of pus in right, shreds in left. Membrane thickened bilateral. Cocaine to sphenoidal wall, right sphenoidal opening easily found, left difficult. Infraction of middle turbinate. Dilitation both opening, gave pus, which come out and could easily be seen. Sullivan antrum operation double, drain in each side. Removed drain next day. Cured.

(2) Miss M. McC.: Complained of pain over eyes, and throat filling up. Sinuses: Large frontals; right maxillary dark. Right hyperplastic ethmoiditis. Punctured both antrums; large amount of pus right; shred left. Sullivan antrum operation double, drain in each side. Removed drain next day. She returned three months later. Right antrum had closed. Punctured right antrum; large amount of pus. Antrum reopened. Cause of closure due to too small opening and rather faulty after treatment.

(3) Mr. I. E. O.: Focal case. Chronic articular rheumatism, sent by Dr. McK. Sinuses: Large frontals, right maxillary hazy compared to left. Punctured both antrums; large amount of pus in right, shreds in left. Treatment: Suction and washing of antrum. Rheumatism cleared up. Sullivan antrum operation double, drain in each side. Removed drain next day. Cured. He was apparently cured by suction and washing, but trouble returned in about 6 months. After operation, that is large drainage of his maxillary sinuses, through nose, he has had a complete recovery from his chronic rheumatism.

(4) Mr. S.: Muscular rheumatism focal: Pain in sternocleido mastoid muscles, both sides. Sinuses: Large frontals; both maxillary dark. Punctured both maxillary sinuses; shreds of pus both sides. Diseased tonsils. Removed tonsils. Cleared up after tonsils were removed.

(5) Mrs. B.: Complained of pain over left eye and root of nose for 3 years. Slight vertigo. Discharge from nose. She had had an attack before which cleared up under suction treatment. Sinuses: Frontals small; left maxillary hazy. Punctured both antrums and found a large amount of pus both sides. She had suction twice a week and washing of the antrum once every two weeks. Cured by washing of the antrum and suction. Treatment: About 3 months duration. She refused operation and, much to my surprise, recovered. One year after date of last treatment has had no further trouble.

(6) Frank H. Age 15 years: Complained of both ears discharging; 6 weeks duration; also discharge from nose. Sinuses: Frontals small; both maxillary dark; pus in middle meatus; pus on Escat bilateral.

Suction 10 minutes. The next day said he was relieved. Very little discharge from nose. Ears clearing up by taking suction twice a week. Sinuses cleared up under suction twice weekly, 6 weeks duration.

(7) Mrs. G. L.: Complained of asthma. Sinuses: Both maxillary hazy; frontals medium. Punctured both antrums; pus both sides. Sullivan operation double; drain in each side. Removed drain next day. After maxillary operation, has had no asthma since.

(8) Mr. W. H.: Had "Flu"; felt down and out. Had fainting spells. I advised him to rest for 2 weeks, then come back and I would go over his sinuses. Frontals small or dark; right maxillary sinus hazy. Punctured both maxillary; pus both sides. Sullivan antrum operation double; drain each side; removed drain next day. Two months after, removed his tonsils. Cured. This patient was in such a weakened condition that he had not followed his usual occupation of a carpenter for several months. He had several fainting spells in the office during first visit. He was so weak that I had to send him home for two weeks before examination.

(9) Mrs. H.: Complained of cough for 7 months and dripping in back of throat for 8 years. Pain back of head and forehead. Tired easily. Pain in hands and feet. Sinuses: Frontals medium and light, right antrum dark, no pus in nose. Punctured right antrum, slight trace of pus. Membrane thickened. Diseased tonsils, sublingual enlarged. Nasal membrane swollen, especially on inferior turbinates. July 28, removed tonsils and Sullivan antrum operation double; drain in each side; removed drain next day. Cured.

(10) Mrs. P.: Hyperesthetic rhinitis. Complained of sneezing summer and winter; nose blocked. Sinuses: Large frontals, well lighted; left maxillary light, right maxillary dark, with No. 4 points on rheostat. Escat trace of pus right. Punctured both maxillary; fair amount of pus both sides. Diseased tonsils. Middle turbinates enlarged. July 16, removed tonsils and adenoids. October 21, Sullivan antrum operation double; drain in each side. Removed drain the next day. December 3, double ethmoid and sphenoid operation and removed turbinates both sides. Last time treated patient she was improved. Middle turbinates had not been removed at time of ethmoidal exenteration, but were removed later because they were not improved and patient had several attacks. Since removal she has had no further trouble.

(11) Miss S. R.: Pain over right eye, sometimes left. Septum slightly to right. Sinuses: Medium frontals, maxillary negative. After contraction: (1) Middle turbinates hyperplastic. (2) Ethmoiditis right, hyperplastic. Diagnosis: Frontal sinusitis right, chronic, due to blockage of right frontal sinus from hyperplasia of right middle turbinate of anterior ethmoid cells. Would advise removal of anterior cells and trimming of turbinates. January 6, pain not as bad. January 10, punctured right antrum; shreds of pus. January 24, submucous resection and opened frontal; removed anterior ethmoid cells; drain and Simpson packs. Drain and Simpson packs removed the next day. February 3, punctured right antrum; large amount of pus. February 15, Sullivan antrum operation right side; drain right side; removed drain next day. March 16, recurrence of pain; frontal closed; dilated frontal, washed out a large amount of pus. April 4, enlarged frontal on right. May 2, suction. May 11, removed right anterior part of middle turbinate bone. Not improved. At present time she has pain and pus both in right frontal and maxillary sinus. From beginning she had both frontal and maxillary washed at odd intervals, especially when pain was severe and we always found a large amount of pus. This is a case for radical procedure.

(12) Mr. D. D.: Complained of sneezing and twitching of eye. Sinuses: Frontals small, maxillary negative. (2) Ethmoiditis bilateral. Posterior inferior hypertrophy, bilateral. Septum seems to be pushed over to right, may be on account of swelling. Diseased tonsils; medium size adenoid. January 21, punctured both antrum; shreds of pus both sides. Removed posterior hypertrophy on right. February, opened left ethmoid and found polypoid; no packs. February, ethmoid operation on right. March 3, Sullivan antrum operation double; drain in each side. Removed drain next day. July 20, removed tonsils and adenoid. August 1, patient returned feeling fine. He had had a previous submucous, which did not relieve sneezing and nasal blockage. He has had no trouble since ethmoid cells were exenterated.

(13) Mrs. P.: Complained of severe pain over eyes, tenderness over frontal region. Acute frontal sinusitis. Sinuses: Frontals small, maxillary clear. Septum to left, with crest. Diseased tonsils and adenoids. Punctured both antrum and infracted right middle turbinate. Large amount of pus, both sides. Pain ceased after washing of the antrum. June 22, Sullivan antrum operation double; drain each side. Cured. This case was put in this report merely to show how easy it is to mistake an acute frontal sinusitis where there is pus in the maxillary sinuses. It shows the necessity of careful routine examination, rather than haphazard guessing.

(14) Mr. M. B.: Complained of hoarseness for 3 months. Examination: Nose: Septum to left; pus and crusts in nose. Sinuses: Large frontals; maxillary dark. Throat: Chronic laryngitis. Diseased tonsils. Treatment: Punctured both maxillary; large amount of pus both sides. Larynx: Covered with pus and crusts; chronic laryngitis. Cords hypertrophied and red. Advised having septum corrected and maxillary operation. Larynx and tonsils treated for several months. May 4, submucous resection and Sullivan antrum operation double. Gauze in left, 4, in right. May 5, gauze removed. May 15, routine treatment nose and throat; nose looks good. June 10, opening in both maxillary sinuses O. K. Nose clear; no crusting and very little dryness. Cured.

(15) Miss A. C.: Nasal blockage. Necrosing ethmoiditis bilateral; atrophy of all the turbinate tissue. No middle turbinate bone on left side. Septum to right. Diseased tonsils and adenoids. Sinuses: Small frontals; both maxillary dark. Advise: Submucous resection, ethmoids cleaned up and other sinuses gone over. Punctured both antra; large amount of pus both sides. March 15, Sullivan antrum operation double; drain in each side; removed drain the next day. May 2, submucous resection; Simpson pack each side. Removed Simpson packs the next day. May 26, no crusting, no pus, mucous membrane red and velvety looking.

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OPTIC NEURITIS FOLLOWING NASAL ACCESSORY SINUS DISEASE*

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The object of this paper is to call attention to the frequently overlooked diseased nasal sinuses, as causative factors in optic neuritis; to present briefly some case histories, and to make a plea for more thorough exploration of the sinuses in patients suffering from optic neuritis.

The term neuritis as here used, is meant to include every condition in the optic nerve, from retrobulbar neuritis in which no change is seen, up to and including optic atrophy.

While there are many causes of optic neuritis, the changes that occur in the nerve, if we except direct toxic action, are nearly always due to pressure, frequently from an exudate and less frequently from newly formed tissue.

The first symptom complained of by the patient is dimness of vision in one eye, usually with a rapid onset and frequently without pain. With the ophthalmoscope, any change from a slight blurring of the disc, papillitis, edema, or choked disc to optic atrophy may be found, the condition seen depending upon the duration and extent of the pathological processes. The retrobulbar neuritis shows no change in the nerve, the diagnosis being made from the other symptoms present. The perimetric findings are valuable if the patient is seen early enough in the course of the disease. The first finding is usually an enlargement of the blind spot of Mariotte; later, with further involvement of the nerve, there is more and more contraction of the form and color fields; and finally, when central vision is lost, the perimeter is of little value. The campimeter of Peters is the most satisfactory instrument for the examination of these cases. The x-ray should be used routinely in every case.

After every possible or probable cause of the neuritis has been ruled out, the patient should be sent to the rhinologist, most of whom are loath to explore the sinuses in the absence of definite lesions. However, the ophthalmologist should insist upon it.

The main object of treatment is to relieve the pressure on the nerve. The prognosis of optic neuritis due to sinus conditions is good if seen before the stage of atrophy sets in, and in some of these cases the disease is arrested, while in a few even a slight improvement is noted.

CASE REPORTS

Case 1: Female. Age 40. First seen August, 1919. Chief complaint, blindness of left eye for past two years and deep orbital pain on same side. Had always been healthy until she had an attack of influenza, lasting for two weeks, in July, 1918. About three weeks later, complained of dimness of vision and pain. Visited several ophthalmologists who told her that she had optic atrophy and nothing could be done for her. Complete physical examination including Wassermann was negative. Iris sluggish to light and accommodation. Media clear. Disc white and atrophic. Referred to rhinologist for relief of pain. Operated upon and found posterior ethmoid and sphenoid filled with pus. Vision before operation sufficient to count fingers at four inches; after operation at twelve inches. Pain entirely gone. This is one of the cases which, if operated upon early, would certainly have had relief.

Case 2. Male. Age 25. Carpenter. First seen September, 1920. Chief complaint blurring of vision in left eye. Well developed male; never has been sick that he knows of. Wassermann, with both blood and spinal fluid, negative. General physical examination negative. Ophthalmoscopic examination shows a choked disc of 3 D. Field of vision unsatisfactory. Vision: O. D. 20/14, O. S. 20/200. X-ray findings negative. Referred to rhinologist, who reported nose normal in appearance but obtained pus on suction. Opened post ethmoid and sphenoid, and patient, as soon as puncture was made exclaimed, "I see better." Forty-eight hours later choked disc had cleared. Vision was 20/50. Two weeks later vision 20/20. Field of vision was normal except some enlargement of blind spot. Nerve somewhat paler than normal. One year later no change.

Case 3. Male. Age 25. Referred to me March, 1921, by physician, to determine the cause of headaches, from which patient had suffered for last twelve years. Never had had a day in that time in which he was free from pain. This pain, which was a deep orbital one, would come on usually in the morning, lasting for a few hours, then clear up; although sometimes it would come on later in the day. Close work did not affect it in any way. Had been refracted over a dozen times but never with any relief. Wassermann, urine and x-ray negative. Vision normal in both eyes. Ophthalmoscope shows slight elevation and blurring of margins of both discs. Perimeter shows enlarged blind spots both eyes, and a contraction of both fields of vision for both form and color of more than half. Referred to rhinologist, who reported nose normal. But, upon opening the sinuses, both ethmoids were found to contain pus. Patient has been free from headaches since. In three days the nerves had cleared up, and in ten days the fields of vision were normal except for enlarged blind spots.

Case 4. Male. Age 35. Clergyman. First seen September, 1920. Chief complaint, dimness of vision of right eye for past three weeks, and getting worse. No pain, no headache, no dizziness, but is conscious of blurring of objects on right side. Vision: O. D. 20/100, O. S. 20/14. Physical examination, including Wassermann and x-ray, negative. Field of vision slightly contracted and blind spot enlarged. With the ophthalmoscope the only change seen was a slight paling of the disc. Rhinologist reported that the nose appeared normal but on opening the posterior ethmoid, pus was found. Forty-eight hours later vision was 20/40 and one week later 20/20. Field of vision nearly normal. Patient has remained so since.

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Case 5. Female. Age 23. Stenographer. First seen December, 1919. Chief complaint blurring of vision of left eye for past three weeks. She had this condition six months ago for a few days, but vision became normal in a few days and she did not consult a physician. Wassermann and general physical examination negative. Vision: O. D. 20/44, O. S. 20/100. Iris dilated and very little reaction. X-ray negative. Ophthalmoscope shows choked disc of 3 D. Referred to rhinologist who found pus in posterior ethmoid. Ten days after evacuation of the pus, vision became normal and has remained so.

Case 6. Male. Age 40. Clerk. First seen January, 1920. Patient reported that for last three weeks has noticed a blurring in front of left eye. Has never been sick. General physical examination, including Wassermann and x-ray, negative. Vision O. D. 20/20, O. S. 20/70. Contraction of form and color fields. Disc margins blurred and edematous. Nasal examination negative, and on opening the postethmoid cells, no pus was found but the mucous membrane was thickened. One week later vision was normal and field had cleared up. Vision has remained normal since.

Case 7. Male. Age 40. Chauffeur. First seen February, 1920. Patient complains of loss of vision in right eye. This came on gradually for the past month. Was always well except for an attack of influenza one year ago, lasting for ten days; was apparently well afterwards. General physical examination, Wassermann and x-ray negative. Perimetric examination shows regular contraction of form and color fields of about half the normal, and an enlarged blind spot. Vision: O. D. 10/200, O. S. 20/20. Ophthalmoscope showed normal media and nerve. Rhinologist reported, on opening the posterior ethmoid and sphenoid, a small amount of pus found and mucous membrane thickened. One week later vision had returned to normal, fields gradually improved to normal and patient has been well since.

Case 8. Female. Age 30. Teacher. First seen March, 1920. Patient states that she has had some blurring of vision for past few months but was not alarmed by it, but the day on which she consulted me was attempting to look through a telescope and much to her amazement found that she could not see anything with her right eye. Never had been sick but frequently has "colds in the head." General physical, Wassermann and x-ray negative. Vision: O. D. 20/100, O. S. 20/20. Ophthalmoscope showed blurring of disc margins. Perimeter shows contraction of fields. Rhinologist reported some pus in sphenoid, and hypertrophy of mucous membrane. Eight days later vision was normal, and in three weeks field had cleared up. Patient has been well since.

In all these cases, the usual causes of optic neuritis, such as a brain tumor, gumma, methyl alcohol, etc., were not present. The sphenoid and ethmoid cells were the primary seats of trouble, and when one considers the anatomical relation of these sinuses to the optic nerve, it is not difficult to see how the neuritis was produced.

Seven of the eight cases were x-rayed and it is interesting to note that all were reported negative. The x-ray should be used routinely in every case, but a negative finding does not prove the absence of diseased sinuses. The ophthalmologist should learn to read his own plates and frequently much valuable information may be obtained from so-called negative ones.

Briefly, my point is this: Given a case of optic neuritis. After ruling out every other cause, and with the nasal condition apparently normal, the diagnostic limit has not been reached until exploratory puncture of the posterior ethmoid and sphenoid sinuses has been made.

THE ELECTRIC DRILL IN THE INTRANASAL MAXILLARY SINUS OPERATION*

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I believe that the consensus of opinion in the operative treatment of suppuration of the maxillary sinus now leans to the view that most of these cases can be cured by drainage through the inferior meatus and that it is the exceptional case in which the surgeon would be justified in doing a Denker, Caldwel-Luc or other radical operative procedure without first having tried the more simple method. While in the majority of cases the removal of a portion of the antral wall through the inferior meatus is a comparatively minor procedure, it is sometimes attended with disagreeable postoperative complications, such as pain, hemorrhage and shock, so that any method which would tend to minimize these complications certainly is worth consideration. Also in a certain type of case, I have found that the removal of the antral wall in sufficient amount to guarantee a permanent opening, is sometimes attended with more difficulty than the mere description of the operation might lead one to believe. If the operation is done under local anesthesia, a thick wall at times almost baffles an attempt at its removal, and in this type of case I have frequently longed for an instrument that could be held in position, and without stress or strain, cut the bone freely. It was this longing that lead me to try the electrically driven trephine and burr.

The use of these instruments in the nose is by no means new, though apparently they have seldom been employed as an aid in the opening of the nasal wall of the antrum. I was astonished at the ease with which the antrum could be freely opened by the motor driven drill and the comparative lack of discomfort to the patient accompanying its use. The operation can readily be done under local anesthesia with little more discomfort to the patient than that attending an ordinary puncture. There is surprisingly little destruction of the mucous membrane, and a thick antral wall can be penetrated almost as readily as a thin one. A very distinct advantage in its use is that the line of penetration is from the nostril directly into the antrum, permitting from the first, a view of the opening while it is being enlarged. The only disadvantage that I have noticed is the original cost of the apparatus and the necessity of exercising a little extra care in sterilization, as the handle holding the burrs must of necessity be more or less complicated. As to equipment, Halle's outfit (put out I believe by Muller) would, I think, be very satisfactory. In this, the handle contains the starting switch. Personally, I prefer the foot switch with a less complicated grip and handle. A smooth running motor of sufficient power to drive these large drills, of course, is necessary and this should be so mounted as to allow of an easy change in position. One should also have quite a number of different sized and shaped burrs and trephines, some for penetration, some for cutting backward and some forward.

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There is nothing of special import as to the technique in the use of these burrs. I prefer to remove the anterior fourth of the inferior turbinate, because it gives a view of the antral wall, and permits a better infiltration of the nasal mucous membrane in this region with the anesthetizing solution, and also allows better drainage from the antrum. A small trephine or the round burr can be used for the initial opening. The tip of the instrument is placed against the anterior part of the antral wall as close to the floor of the nasal fossa as possible. The handle is then carried across the face so that the shank of the burr lies against the septal side of the vestibule. While pressure is being made gently backward and outward, the current is turned on and the instrument slips into the antrum in less time than it takes to tell it. The opening can then be readily enlarged in any desired direction. Sometimes, when the antral wall is thin, the opening can conveniently be enlarged in a backward direction with the ordinary nasal punch. When adrenaline has been used, there is very little bleeding, though occasionally, when cutting close to the floor of the posterior portion of the opening, a sufficiently large vessel is encountered to require temporary packing before a non-obstructed view can be obtained.

The postoperative treatment is the same as that with any other intranasal operation on the antrum. Personally, I prefer to pack with strips of iodoform gauze for one or two days. After removal of this gauze, no further dressing is necessary, though the subsequent treatment of the opening into the antrum is quite important.

The use of the electrically driven instrument has made the opening of the maxillary sinus a matter of a five or ten minutes' office operation, and after a rest of a few minutes, the patient will go home with almost as much freedom from discomfort as when the antrum has simply been lavaged. There is nothing new under the sun, much less so the use of the electric drill in nasal surgery, and in calling your attention to its use in maxillary sinus disease, I am not making a claim for a new technic but only offering my experience, believing that perhaps some of you may find it useful.

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VACCINE THERAPY IN ACCESSORY SINUS INFECTIONS*

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An attempt to consider judiciously even a regional phase of vaccine therapy is to-day a large, complex and perplexing undertaking. Large, both in point of comprehensiveness and importance; complex, because of its inseparable relationship to the whole theory of bacterial vaccines and their practical application; perplexing, by reason of much conflicting testimony of writers, seemingly of equal authority, and the consequent risk of erroneous deductions which might further perpetuate, if not aggravate, a confusion already seemingly too protracted. To be sure, vaccine therapy has not been on trial very long; but since we are living in an age when changes of revolutionary proportions in so many lines and spheres are accepted by the average individual in a matter-of-fact sort of way, delayed verdicts seem conducive to impatience.

The average physician is an average human being and is imbued with the same characteristics as the average layman; he may not be endowed with any more nor any less intelligence, but it must not be forgotten that he is qualified by education and training to be the logical interpreter of any and all innovations discovered, devised or proposed for the restoration or maintenance of the individual or public health. With proper appreciation, then, of the gravity of its position the medical profession, characteristically, as a whole, does not accede readily to radical departures from established precedents or practices.

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Upon the subject of bacterial vaccines, then, as upon all modern additions to the physician's armamentarium, it is not surprising that we still find a diversity of opinion concerning their value, scope, application and methods of administration; so, for those of earnest purpose and with open minds, there is much to be gained by a careful scrutiny of the literature from the time that the theory was first advanced as well as current publications; but there, likewise, is need for wise discrimination.

I shall state at the outset that my own experience, during the past seven years, with vaccine therapy as an aid in the treatment of sinus and ear infections, particularly with stock vaccines in acute cases, has been most satisfactory and has established in me a confidence in their value which no amount of conflicting testimony could easily shake.

During those seven years I have tried to keep reasonably familiar with the literature upon the subject, and in my practice to be ever watchful for the much heralded dangers; but with each passing year I have continued to gain increasing reassurance with regard both to the safety and to the uniformity of results derived from vaccines administered, not promiscuously, nor as a specific, but as a most important accessory measure in the treatment of all acute suppurative infections of the sinuses and of the middle ear and mastoid.

Supposing, however, that if in my earlier reading I had run across only such articles as were written by some of the ultraconservative, warning of the grave dangers connected with the administration of any vaccine, or of the absurdly unscientific procedure of treatment with mixed stock vaccines and of the utter folly of expecting beneficial results from the latter, I likely should have concluded that my own results were purely "dumb luck" and that I had miraculously avoided wholesale manslaughter. On the other hand, had I missed those articles and found only the opposite extreme I might have wondered whether or not I was criminally neglectful in not having treated all my patients for everything with vaccines.

That may be an exaggerated characterization of the extremists, whose influence, after all, may be very necessary factors in the evolutionary stages of any new principles toward an eventual consummation of rationality. That between the two extremes, however, there lies a middle course, which any careful physician may follow with safety to a definite, desirable end in the treatment of a frequent and oft-times serious type of disease, I believe there is ample evidence to sustain. Furthermore, I believe that the best interests of the public will be served when the general practitioner, the family physician, urban and rural, as well as the specialist, discovers that stock vaccines can be used to a degree of safety equal to that of the majority of the most frequently employed official pharmaceutical preparations, concerning which there is no question of propriety, and that there are certain classes of acute infections which respond to vaccines more effectually than to any other known treatment and in proportion to its early administration, for, as a rule, the family doctor is the one who sees those conditions first.

My first personal experience in the employment of a bacterial vaccine was in August, 1914. I also was the patient, and notwithstanding the old adage that "a physician who treats himself has a fool for both doctor and patient," that instance, for once, did not seem to verify the assumption; or perhaps it was merely one of those "exceptions which prove the rule." At any rate, I have not yet found reason to doubt that the end justified the means and since the course of that case was fairly representative of many that I have since observed I shall give its history somewhat in detail.

The condition was an acute infection, seemingly at first in the ethmoidal cells, occurring apparently simultaneously on each side, and of a most virulent and fulminating type that I have but rarely seen. Within twelve hours the earlier serous exudate had been transformed into a profuse mucopurulent discharge and within a few more hours seemed to be pure pus. Besides local discomfort, I felt generally achy and both physically and mentally depressed to a marked degree. The depression, I attribute partly, however, to the doctor's proverbial apprehension, if not actual realization, of the possible seriousness of such an infection and the probable obstinancy with which it would yield, or more likely, refuse to yield to treatment. During the first twenty-four hours I was at the seashore, then returned home. All symptoms were becoming rapidly more aggravated and I think at this stage there existed a pansinusitis.

For several years I had read with only half-hearted interest, I confess, reports of vaccine research work both here and abroad and just a few days prior to my infection I had read a very favorable report of clinical experiences with vaccine therapy, which left sufficient impression to be recalled in my own predicament. So I concluded that if there was ever a good chance to test the efficacy of vaccines I had it then. Had I happened upon any one of a dozen or more articles of the ultraconservative type that I have since read I probably would not have been so bold and I would still be treating such infections in the same old way, most of them lasting two or three weeks and some lingering along into months.

I made a simple stained-smear examination of the discharge and found swarms of streptococci, staphylococci and pus cells—nothing else. I had no intention of waiting long enough to have an autogenous vaccine made, notwithstanding they were strongly favored by all the articles I had read, but telephoned to a nearby drug store to see if a stock vaccine corresponding to that bacterial combination could be had and found that they had a staphylococcus-streptotoccus combined vaccine in individual syringes of graduated doses, numbers 1, 2, 3 and 4. The No. 1, which I took at once, contained 100,000,000 staphylococci and 25,000,000 streptococci. This was less than 30 hours from the time of my first symptoms. Within twenty-four hours after the injection of the vaccine every symptom seemed conservatively fifty per cent better. At the end of forty-eight hours after the first injection, the No. 2 dose, just double that of No. 1, was used. The earlier improvement had continued steadily and within another twenty-four hours, the fifth day of the disease, the discharge had entirely ceased, the nasal congestion had subsided sufficiently to permit of free respiration and I felt practically well. Only two doses of vaccine were used and not only was there no recurrence of the purulent discharge, but I was freer from nasal stuffiness for the following few months than I had been for a long time. (Be it remembered that at that time I was still furnishing storage room for a pair of very "rotten" tonsils.)

In addition to the vaccines there were several other things done, by way of concomitant treatment, which I consider of importance. First, I took as a mercurial purge, a formula which I have for many years found to be most efficacious in that particular form of hepatic torpidity resulting from and associated with more or less constant toxic absorption from some focal infection, such as diseased tonsils, and which I strongly recommend to others, in dosage to suit the case. The most usual adult dose is as follows:

Calomel	—	
Blue Mass	aa	gr. i
Ext. Colocynth Co.		gr. ii
Ext. Hyosciamus		gr. ss

Make into one capsule and take at bedtime. A copius, biliary stool the following morning, without the use of any saline, is the usual result, and the liver continues more normally active thereafter than is usually obtained by the classic procedure of calomel at night, followed by saline. This combination of the mild chloride and the carbonate of mercury seems to have a peculiarly felicitous effect upon the liver in this particular class of cases. I have furthermore observed that many individuals who had seemed to have some idiosyncrasy to calomel, when given in the ordinary way, can take this capsule without any unpleasant effects. On the other hand, to be perfectly fair, I have also found a few who seemed to have more than the ordinary discomfort from griping.

In the local treatment of the sinus infection I use a mildly astringent and soothing oil application, composed as follows:

Camphor	gr. i
Cocaine (alk)	gr. ii
Ol. cinnamon	gtt. ss
Liq. albolene	fʒ i

Apply on small pledgets of cotton to each nostril, allowing them to remain a few minutes and, if necessary, re-apply two or three times till the intumescent, engorged or swollen membrane shrinks sufficiently to permit of nasal respiration and also to facilitate drainage and to reëstablish, at least temporarily, ventilation of the sinuses. This treatment may be repeated three or four times daily during the active suppurative stage and twice daily, night and morning, as conditions improve. Externally, occasional moist compresses over the upper part of the face, as hot as can be comfortably borne, will do much toward relieving the pain and have also a good effect upon the congested sinuses. Analgesics are not often needed; but in the event of there being considerable neuralgic pain, a combination of phenacetin, aspirin and caffein can be used with good effect; or 1/24 gr. doses of heroin every hour or two for several doses in the early exudative stage is ofttimes beneficial.

It is preferable to keep up instead of going to bed through the daytime and to take a brisk walk occasionally in the open air, unless contraindicated by elevation of temperature. Eat moderately of light, wholesome food and drink water freely. I do not use adrenalin in any way whatsoever in the treatment of any nasal condition; I never prescribe aqueous sprays nor douches for the nose in any acute or subacute sinus infections, nor do I favor any form of suction apparatus. In fact, I deem them positively harmful.

I have given the above technique somewhat in detail because, modified to suit the individual case, it represents the most commonly applied treatment in connection with vaccine therapy that I have used in acute sinus infections ever since my own infection seven years ago.

Following the results obtained in my own treatment with the stock vaccine, I began to administer it to others, and within a month's time had treated twelve patients suffering from sinus infections of varying duration, from a few days to several weeks, by which time I was an enthusiastic convert. A few of the cases cleared up as promptly as did my own infection; others were somewhat slower, while in one of them I could not feel certain that I could see any special effects at all from the vaccine. One thing was certain: I could not detect the slightest unfavorable effect in any of them. Stock vaccines were used in every case and most of them were the staph.-strep. mixture. No cultures were taken, but stained smears were examined in each case and the mixed vaccines were selected according to the predominating organisms found.

From that time on I continued the employment of vaccines in practically all suppurative infections involving the accessory cavities or the middle ear, making careful observations with regard to the following data: (1) Age of patients; (2) Character of infections; (3) Contributing influences, local and systemic; (4) Atmospheric states and influences on infections; (5) Duration of infection at time vaccines were started; (6) Combination of vaccine employed and size of dose; (7) Interval between doses, and total number used; (8) Reactions, local and constitutional, if any; (9) Concomitant local treatment and internal medication; (10) Response of disease to treatment; (11) Recurrence, if any, of similar infections in patients thereafter; (12) Degree and duration of seeming immunity in patients to whom prophylactic treatments were given.

By the end of my first year's observations on nearly a hundred patients with acute, subacute and chronic infections of the sinuses and ears, I had evolved a more or less routine plan of procedure and had arrived at more satisfactory conclusions regarding the practical value of vaccines. I have but rarely found it expedient to vary that plan or to alter these conclusions during the six years from then till now.

An item, not unimportant, is that all the cases treated were private patients and could, therefore, be followed more or less satisfactorily, not only during the course of the infection under treatment, but most of them were seen occasionally thereafter. Intelligent histories could be obtained in most cases regarding previous susceptibility to similar infections, the character of treatments they had had, if not previously under my own care, and the usual course of the other attacks without vaccines as compared with the vaccine treatment. I have had occasion to treat recurring infections in some, though never nearer than six months to a previous vaccine treatment, and very rarely under a year.

(1) The total number of patients that I have treated with vaccines is approximately four hundred, ranging in age from two to sixty-four years. While the majority of these were treated with vaccines for only one illness, a few have been treated for a subsequent infection. About 30 per cent have been given prophylactic injections at least once, and as many as one-half of the thirty per cent several times, never oftener than twice a year, spring and fall; others once a year, and the remaining ones at irregular intervals according to recurrences of or suspected susceptibility. Most of the prophylactic treatments were for adults.

(2) Clinically the majority of infections treated were of the acute and subacute purulent type, involving one or more of the accessory sinuses, the tympanic cavities or the mastoid cells. A few were of the profuse catarrhal type, such as sometimes occurs in the early or secondary stages of acute colds, but inoculations for very few of the ordinary catarrhal colds were attempted. (I have not included in this paper any cases of the hyperesthetic type, not even when complicated by purulent sinusitis.) Cultures were taken and incubated in a small percentage of cases; smear-stains were examined in a large number, while some were treated without any microscopical examination of exudate.

(3) Among contributing influences toward the contraction, the aggravation or the perpetuation of infections in the sinuses and the tympanic cavities, I consider diseased faucial tonsils fully equal to all other agencies combined, not forgetting nasal obstructions, adenoids or meteorologic effects. The chief damage exerted by diseased tonsils, I believe to be not so much direct, though they lie in close proximity to the sinuses and ears, as indirect, by lowering the physical state of resistence through their toxic effect on the hepatic functions and the resulting intestinal toxemia, disturbed intravascular pressure and, ultimately, more or less constant intumescence of the nasal, sinus, eustachian, and tympanic membranes, interfering thereby with sinus and tympanic ventilation, and maintaining a susceptible mucous membrane surface bathed in a catarrhal exudate favorable to the incubation of introduced foreign bacteria, or to some exciting influence which increases the virulence of the organisms already present.

(4) Just why myriads of ordinarily toxic or-

ganisms of almost innumerable variety (said by one authority to number over 400 isolated varieties) can be harbored in various parts of the human body and the individual continue in perfect health till some sudden influence changes one or more of those varieties of germs from a condition of quiescence into one of violent virulency is, in itself, a big subject for discussion. It constitutes one of the largest problems that research students have attempted to solve.

One thing of which I am convinced, however, is that meteorologic phenomena, though poorly understood and rarely recognized, play a very important part. I do not refer to ordinary weather conditions such as the relations between cloud and sunshine, heat and cold, or aridity and moisture, although they do have some effect; but rather to barometric variations in relation to those vague or incomprehensible "electric phenomena." Such a theory, of course, is without any practical value in our present state of ignorance but I do not believe that it will always remain in the speculative list. I know of no more rational explanation of many so-called epidemics, or pandemics, such as the influenza pestilence which we so recently experienced. It is a large subject in itself and can only be referred to in this connection as it affects the etiology of sinus infections; but on what other ground can we explain the variations in the predominance of certain common bacteria in different seasons, intervals or periods than that certain organisms thrive or become more virulent under certain meteorological stimulation?

For example, during the first two years after I adopted the use of vaccine therapy we found staphylococci and streptococci almost universally predominant in acute suppurative infections of the sinuses and ears. In the fall of 1916 the relations seemed to change and pneumococci largely predominated. Two years later the streptococci of various types, particularly the hemoliticus, became more active than ever known, and to this day, instead of being able to account for the great pandemic on the ground of some specific organism, the bacteriologists can only say that the same infecting organisms which we find always present were found, but that they appeared then with greatly increased virulence and seemed to develop some unusual characteristics.

(5) After only a few months observation I felt satisfied that the best results from vaccines were obtained in proportion to the earliness of their administration, and uniformly, since that time, have tried to give the first injection as soon as possible after an infection is found to be more than an ordinary catarrhal cold.

(6) I have never used more than three combinations of mixed vaccines in all the acute cases that I have treated. As stated above, for two years I used almost entirely the staph.-strep.-mixture. Then, on finding that the pneumococcus had appeared almost universally as the predominant organism, and although found in some cases in practically pure culture, I began using the pneumococcus-staph.-strep., mixture on the principle that since one of that group is nearly always the active organism in such infections, by using the three in combination, at least a fair antibody resistance could be established against all. While, theoretically, the nearer we can approach to specific therapy, the surer the cure, and on that ground so much criticism has existed against the use of mixed stock vaccines, it has recently been announced from the research laboratories of an authoritative source* that their "own investigations and those obtained by other workers in this field would appear to show:

"1. That as yet no limit has been found as to the number of antigens which will elicit a simultaneous response.

"2. That such responses approach in volume that obtained with single antigens.

"Our experience with the multiple bacterial immunization of animals and with the coincident immunization of animals against toxins and bacterial antigens leads us to the conclusion that there is nothing in the immunity mechanism itself to preclude the possibility of a very wide polyvalent antibody production.

"The undoubted fact that many animals under multiple antigent immunization at times fail to respond with as great a volume of production as occurs with single antigens may be explained by other factors such as a depreciation of the general physical condition due to the large amounts of bacterial protein injected.

"If *all* animals failed to give adequate responses under multiple antigen immunization and the reduction of the volume of the response to each antigen bore a distinct relation to the number of antigens employed, it could then be inferred that the immunity mechanism itself was at fault and that true adequate polyvalency was impossible."

The third combination that I have occasionally employed in treatment, more especially in cases that had passed the acute stages of infection when first seen, and in which an examination of the discharge showed greater variety of organisms with no distinct predominance of any one, is that commonly called "Catarrhalis Combined," made up of Mic. catarrhalis, B. Friedländer, pneumococci, streptococci and staphylococci (albus and aureus).

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* (Huntoon and Craig, Journal of Immunology, May, 1921)

This combination, however, I have used more in prophylactic treatemnt. The dosage that I prefer is rather smaller than that reported by the average, never being larger than 50,000,000 pneumococci, 50,000,000 staphylococci, and 25,000,000 streptococci for the first adult dose, but frequently smaller. Succeeding doses are usually double that of the one preceding. For children, I use one-half to one-third the adult dose, or less, according to age.

(7) Two days are usually allowed between the first and second dose, four days between the second and third, and about a week or eight days between the third and fourth, though a fourth dose has not been used in more than one-half my cases. I have never used more than three doses for any child. I have used a fifth dose for only one adult in an acute case. That one, which was double the fourth dose that had been given him one week previously, produced considerable inflammatory discomfort at the site of injection, and the sinus infection still persisted for several weeks before it entirely cleared up; so I concluded that the vaccines, in his case, had manifested no appreciable effect upon the disease either in small or in large dose. I administer the injections subcutaneously, never intramuscularly, in the upper arm, alternating from one arm to the other to avoid soreness and to have a perfectly new area for the antigen to work.

Commercially prepared stock vaccines have been employed in about 90 per cent of my cases, and in none have I seen evidence of any imperfection in preparation. Autogenous vaccines have been used only in chronic cases, in which, of course the dosage and intervals were arranged differently from those of stock vaccines in acute infections. The dose however was made small at first as in the stock preparations, but gradually increased at more regular intervals, a few days or a week apart, and continued over a period of several weeks.

(8) One patient, a man of 53 years of age, developed urticaria over his body, arms and legs, with itching, worse over the abdomen, following the first injection. It faded away in three days. Thinking probably it was incidental, another dose, about one-half the size of the first was administered and the same symptoms reappeared. No further vaccine was used. A woman developed an extremely red and rather marked local swelling of the arm following the first dose. No further injection was used. These were the only two patients among the whole number that developed symptoms that were really uncomfortable or of more than passing notice. The man was being treated for a subacute and the woman for a chronic sinus infection. Perhaps five per cent of the patients develop a fairly painful reaction on the arm with a moderate degree of redness and swelling. About fifty per cent show a very slight local reaction. Rarely has anyone complained of any discomfort, local or otherwise, being aware of slight soreness at the site of the injection only on pressure for one, two or, perhaps, three days. Occasionally one will speak of noticing slight systemic symptoms some hours following an injection, but none has ever complained of feeling really ill or of having gone to bed or of remaining in bed the following morning on account of it. All other patients seemed to escape all evidence of any reaction at all, either local or general. No definite relation could be established between the response of the infection under treatment and the reaction, subjective or objective, contrary to the usually reported rule.

(9) The same local and systemic measures that would be indicated in the treatment of sinus and tympanic infections without vaccines, are equally applicable and should not be omitted when vaccines are employed. The most commonly followed routine in my own cases was that mentioned in the report of my own infection. Unusual or complicated local involvements must be dealt with according to indications, and anything more than the simple preliminary cholagogue laxative or an analgesic should be referred to the family physician or internist. Unless constitutionally unable, or there is temperature contraindication, the patient should keep up instead of going to bed.

(10) Response of infections to the treatment as outlined has proved vaccine therapy in my practice to be of inestimable value. As nearly as relative values can be estimated, I should say that the adoption of vaccine therapy has increased my efficiency at least 50 per cent, if not more, toward establishing an early cure in the average acute or subacute sinus or ear infection.

In acute suppurative otitis media, I now regard operative mastoiditis as an almost unknown complication, where the treatment is instituted early; and some cases, even with an actively established mastoiditis, complicating an acute middle ear infection, have responded promptly to the combined vaccine and local treatment.

I have always been conservative regarding surgical intervention in mastoid infections, but in the past seven years I have performed less than one-tenth the number of mastoid operations as in the same length of time preceding, with fully as many cases of ear infections treated during the last seven years as during the first. Remember always, however, that the addition of vaccine therapy does not permit of slighting in the least degree the usual local measures which are absolutely essential in the treatment of every ear infection.

(11) No patient has been known to develop a subsequent infection nearer than six months; rarely has there been the recurrence of a similar infection under a year, while the majority have not, to my knowledge, had any subsequent purulent infections at all.

(12) Neither the degree nor the duration of immunity can be more than approximately determined. I can say only that I believe prophylactic doses of the pneumo-staph.-strep. vaccine, with the addition probably of the micrococcus catarrhalis, exert a very advantageous effect toward reducing the susceptibility to purulent infections of the sinuses and ears for a period of six months to a year. An item that has played no small part in a prophylactic influence on the subsequent history of a large percentage of patients treated for sinus and ear infections is that I have later removed their faucial tonsils, a measure which I consider of far greater importance than vaccines.

The foregoing recital of my experiences with vaccine therapy, then, is the chief excuse I offer for my enthusiasm; for, while there are many other clinical reports equally as ardent as my own, or even more so, the majority are more conservative. It is not easy always to be fair in our estimate of positions held by others, however honest our intentions; but in a brief analysis of the vaccine question as it exists to-day I have tried to approach the problem from several of the variant angles in an endeavor to emerge with at least a fuller appreciation of the different points of view, even though the time be not yet ripe for the ultimate harmonious solution.

Since most of the objections to the principle of vaccine therapy in general may be applicable also to its regional application, we might profitably consider briefly some of the chief circumstances that have acted as retarding influences against the more general employment of vaccines. I shall mention but four:

1. The absence of any treatment of the subject in textbooks. There are, of course, some very thorough and complete treatises from the standpoint of the serologist, embodying all the scientific research phases, but lacking naturally in practical, clinical instruction such as the average practitioner depends upon for his working library. Most of the textbooks, whether from the surgical, medical or otolaryngological point of view, make brief reference to vaccine therapy, if at all, and that largely consisting of quotations from current journal publications, without assuming a very decided personal attitude or opinion. It must be remembered in this connection, however, that many of the most popular textbooks have not undergone recent revision, and even the new editions do not at once supplement the older ones on the shelves of the average doctor.

2. Actual and potential dangers alluded to in laboratory research reports and apprehensive utterances of the ultraconservative, whether clinically experienced or by nature merely distrustful of innovations. This influence is largely a hang-over from the earlier literature, for it is becoming generally realized that most of the dangers in vaccine therapy, against which we have been cautioned, are largely laboratory occurrences, where experimentation with large dosage showed possible untoward effects. These, of course, have been very necessary and very timely, since every physician does not always exhibit a degree of discretion in the use of new measures commensurate with the responsibility of his position or the confidence placed in his judgment. The careful clinician, the progressive-conservatist, to which class, fortunately, the average doctor belongs, is gradually placing those apprehensions upon a sounder basis.

In this connection I should like to quote Sir James McKenzie in a recent address.[1] Though not speaking upon the subject herein under discussion, one reference in his remarks illustrates my point:

"In dealing with the clinical aspects of research, and particularly with the opportunities of the general practitioner, I must dwell upon the limitations of laboratory methods, and I may seem to belittle their importance. This is far from my intention. No one recognizes the importance of laboratory methods more than I do, and probably no clinical observer has received greater help from them. Indeed, I consider that I have a better appreciation of their methods than many who indiscriminately belaud them. My experience not only enables me to appreciate their value, but also to recognize their limitations. The part which the clinical observer should play in medical research is to-day not recognized, and there follows as a consequence an insurmountable obstacle to attaining the chief aim in medicine, the prevention of disease."

The great bugbear to the uninitiated, or to the doctor who has made his first adventure in the use of vaccine, is anaphylaxis, upon which point

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[1] Sir. James McKenzie (Brit. Medical Journal, June 4, 1921).

I shall simply quote from a recent article by Arthur F. Coca:[2]

"In view of the facts which form the basis of the foregoing discussion, it seems necessary to conclude: first, that if anaphylaxis does occur in man, it does so only very rarely; and second, that there is no positive evidence that anaphylaxis occurs at all in human beings."

3. Deprecatory utterances against nonspecific therapy, in which mixed vaccines are regarded as the counterpart of "shot-gun" drug therapy and dismissed as unworthy of adoption because they most frequently have to be employed empirically. In other words, the odium attached to "pseudoscientific" therapy. I shall reply to this by asking you to compare both the degree of accuracy and the degree of danger between vaccine and drug therapy. What, for instance of the variableness in digitalis, the instability of preparations, variableness in effect on different individuals under different circumstances, and its dangers? Or, take the series of vasodilators, or the most common group of all, the purges. Again I would quote Sir James McKenzie from the same article above referred to:

"The pharmacologist scoffs at the clinician as unscientific and as employing empirical methods. The clinician replies that the laboratory teaching is academic and unpractical." Then, referring to digitalis in particular: "I, therefore, formulated the theory that the *action* of *digitalis* is *modified* by *the nature of the disease*. It is manifest that the pharmacologist could never find this out and his results were different, therefore, from the clinician."

Note the following from H. L. Lyon-Smith, in *The Practitioner*, London, August, 1921, on "The Protein Applications of Antigen Therapy in Practice":

"One of the greatest hindrances to progress in inoculation treatment has been the general acceptation of what are known as 'Koch's Postulates,' especially No. 3, which states 'that the isolated and cultivated organism, on inoculation into a suitable animal should reproduce the disease.' In certain diseases, e. g., tuberculosis, typhoid fever, tetanus, plague, diphtheria, etc., specific organisms are responsible, but even in these maladies the so-called secondary infections are well known to aggravate the primary infections, or even to pave the way for them. The recognition of these secondary infections and their inclusion in the treatment has hitherto been largely neglected: e. g., in tuberculosis. In the sputum, besides the tubercle bacilli, swarm pneumococci, streptococci, staphylococci. Friedländers' bacilli, and other organisms which are frequently discovered, each of these being as destructive to lung tissue as the tubercle bacilli and entitled to be combined in the treatment of the case. Also note the following interesting point of caution: "One may give, in most cases, large doses of the wrong vaccine with very little harm; but when a correct diagnosis of the infecting organisms has been made, then an overdose of the right vaccine will produce injurious hypersensitiveness, and may make the patient worse for a few weeks. This is well known and has been the cause of a good many sound practitioners avoiding a form of treatment possessing these two-edged properties. It may be taken as a golden rule that the more intense the degree of infection the smaller must be the initial dose of antigen employed in the treatment."

4. The characteristic antipathy of the medical profession toward the employment of anything commercially produced; a distinguishing trait born probably of their eternal aversion to anything that savors of "patent medicines" or even to their next-of-kin, proprietory products. The analogy, however, is unfounded. Commercial vaccines are prepared in the same manner as are stock vaccines in institutional or private laboratories, but with this probable difference: being produced more or less constantly and in greater quantity, there are necessarily maintained by the commercial houses expert serologists with a trained staff of workers, who, becoming specialists in their particular field, are apt to produce a more stable product. Competition encourages to efforts toward higher perfection in products and likewise to more satisfactory distribution to the profession, the majority of whom do not have access to laboratory conveniences.

Since it is undoubtedly true that the longer the delay in administering the vaccine, the greater the difficulty in effecting a cure of acute sinus and ear infections, I maintain that the commercial producers and distributors of vaccines of high quality are rendering the medical profession an admirable and, let us hope, also dignified and ethical service.

DISCUSSION

Dr. Herbert M. Goddard (Philadelphia): I think the Chairman brought out a point which we might all consider very carefully, and which in many cases is overlooked, and that is the value of teamwork. That to my mind is most essential, together with the checking up of the various measures. For instance, some men will take an x-ray plate and be satisfied with a reading of sinus disease, whereas if it were studied in connection with transillumination and also the use of the nasal pharyngoscope and a checking up of all these things, the results would be much more gratifying.

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[2] Arthur F. Coca (Journal of Immunology, July, 1920).

I am personally acquainted with the careful study Doctor Sullivan gives to every patient, and therefore realize that when radical measures are pursued it should be so. There is, however, a very great tendency among the younger men to proceed along the line of what seems to be least resistance—to remove inferior and middle turbinates because they appear enlarged and obstructive; or because there is a diseased maxillary antrum to do one of the many radical operations; or because the x-ray shows pus in the frontal sinuses and there is pain upon pressure, to resort to a Kilian with its attending deformities, frequent loss of sight, and, in most cases, failure to give results. Doctor Sullivan has happily emphasized the fact that there is seldom any need to destroy turbinates, even though radical measures are required, and seldom, if ever, should a complete exenteration of the ethmoid capsule be done.

It is gratifying to note that to-day the pendulum is swinging toward conservatism, as is shown by Doctor Sullivan's statement that where ten years ago ten radical and five Kilian's were being done each year, during the past five years there were but five radical and the same number of Kilian operations. Personally, I feel that if more attention were given to the correction of nasal deformities, thus establishing proper ventilation and natural drainage, there would be a marked decrease of diseased sinuses, and when diseased, they could be more readily treated along conservative lines.

Dr. Edward B. Heckel (Pittsburgh): I think teamwork is the keynote of the solution of this problem. The ophthalmologist does not see as much of this work as the rhinologist. There are certain conditions which affect the sphenoid and ethmoid sinuses, an inflammatory process as the result of anatomical variation or of mechanical procedure, and in many instances only the ophthalmologist sees that the causative factor is anatomical variation. For some years these cases went by unrecognized, but now that we have better methods of diagnosis the outlook is more hopeful.

In regard to the reading of plates, I think neither the ophthalmologist nor the general physician should attempt to do this. I have always felt it should be left to the roentgenologist, principally because he is constantly dealing with these plates and therefore should be better equipped to do so than the man who reads them only occasionally. It has always been my practice to leave the interpretation of plates to the roentgenologist, to let him point out to me the variations, and then we use our judgment together. Sometimes we do not quite agree with the roentgenologist, and eventually he may be able to convince us that he is right, after all. But coöperation and teamwork in the reading of x-ray plates is very essential.

Regarding pupillary reflexes in an optic neuritis, where there is no involvement of the optic nerve, there is no reason why people should not react quickly unless they have a consensual reflex, and then that reflex will very likely be evident. If the head of the nerve is involved it is not a pupillary edema, but rather a neurorhinitis. I can imagine that if we had a purely anatomical pressure we might have a typical pupillary edema, but I think that is the exception. If there is no lesion there, then the use of the perimetric field is of very decided value in diagnosis. But after all, it is not a one-man job by any means. As has been brought out by the Chairman in his address, teamwork is the keynote of the whole situation.

Dr. William A. Hitschler (Philadelphia): The claims occasionally made for transillumination and the x-ray in diagnosing nasal sinus disease, bear an approaching similarity to the famous report concerning Mark Twain's death. They are somewhat exaggerated.

A quarter of a century ago anatomists pointed out the great possibility of error in the use of the transilluminating lamp—a matter which seems to be forgotten now and then. When Heryng enthusiastically brought the diagnostic lamp to Vienna in 1894 or thereabouts, Hajek placed it in Heryng's mouth and demonstrated, to the latter's surprise, that while one maxillary sinus was luminous the other was dark. Transillumination is certainly useful, but it would be comforting to know just when it could be depended upon.

The diagnostic results of the x-ray are at times so brilliant that they afford keen delight to the rhinologist. However, I should like to cite a typical case. A patient had double maxillary sinus disease. Immediately before the skiagraphic examination one maxillary was lavaged through the natural opening, the usual large quantity of mucopus appearing in the washings. The x-ray was then taken, after which the other maxillary was lavaged, and with the usual positive result. The reontgenologist reported that both maxillaries, as well as all other sinuses, were normal.

Perhaps it is not too captious to say that not only are there too many operations performed upon the nasal sinuses, but there are too many of an ultraradical nature. And by ultraradical is meant operations in which too much normal functionating tissue is removed, or too close an approach is made to the orbital or cranial contents. Moreover, when a new method of operation is devised, especially if it be of a radical nature, some of us simply cannot resist the contagion; we get the fever and break out into an operative rash.

We all recognize the occasional necessity for operation, either conservative or radical, for which there need be no excuse. But sometimes a patient is regarded merely as a "case" and not as a human being.

Conservative treatment, including lavage and medication of the sinuses through the natural openings, result so satisfactorily in so many chronic cases that it is surprising more emphasis is not laid upon it. Some patients are completely relieved; others rendered so comfortable that they are justified in refusing operation—an attitude which the physician should encourage. It has the disadvantage, however, of not aiding in the compilation of operative statistics. But suppose the position of patient and physician were reversed? At a recent meeting of a national medical society a member remarked that there seemed to be three classes of patients: patients in the dispensary, patients in private practice, and patients in one's own family. The applause that greeted this epigram was spontaneous and sincere, not conventional. It was a healthy sign. Authorities are not in accord in accounting for the fatalities that now and then follow sinus operations, some maintaining that too much and others that too little tissue is removed. Experience is the best teacher, but sometimes she has careless pupils.

Dr. George B. Jobson (Franklin): Some years ago at the meeting of the Academy of Ophthalmology and Otolaryngology in New York, when knowledge of the interrelation between diseases of the nasal sinuses and diseases of the eye was limited, I presented two eye cases which were caused by disease of the nasal sinuses. Since that time I have observed and treated many similar cases, and, like Doctor Sullivan, I am less radical in my intranasal operating than in the years gone by, and the results are as good. Contrary to what Doctor Davis has said, I am greatly in favor of suction and use it in all of my sinus cases whether I have operated upon them or not. The soft tissue is shrunk with a solution containing adrenalin, and it remains in this state for some time afterwards, even when suction is used, thus greatly facilitating sinus drainage. The negative pressure employed is graduated between five and ten pounds. I do radical operations when there is antral involvement from diseased teeth, and when there is diseased bone present. When there is sinus disease and a deflected septum I correct the septum and use suction for the sinus trouble. The third condition in which I am radical, is hyperplasia of the sphenoidal sinus; using great care when entering the sinus not to perforate the roof, as it is sometimes quite thin, or open to the dura.

I do not recall whether Dr. Redding mentioned optic nerve pressure from a diseased sphenoid sinus, which is at times a cause for optic neuritis. Krauss stated in 1909 that impaired vision might result from the toxins of the pus in the sphenoidal sinus attacking the mascular bundle of the optic nerve, his contention being that in such cases the vision cleared too rapidly after caring for the sinus to be true optic neuritis. It is a great wonder that there is not more frequent involvement of the vital structures above the sphenoid sinus when we consider how thin the bony roof is; in fact, it is absent in some cases.

When a patient is losing his vision without discoverable cause, and we have negative toxemia from teeth, tonsils, bowels, and syphilis, or growths in the brain, I think we are perfectly justified in exploring the nasal sinuses, even in the absence of appreciable sinus disease.

Dr. William Campbell Posey (Philadelphia): It seems to me that we are getting just a little too radical in recommending operation on the sphenoidal and ethmoidal sinuses in inflammation of the optic nerve, when we cannot find other cause for it.

Dr. Redding has read a most interesting paper and has cited a number of cases where there was inflammation of the optic nerve and in which, although at the time there was very slight, if any, evidence of inflammation of the cells, after opening of the sphenoid cells and posterior ethmoid cells, there was rapid restoration of vision in the affected eye. Dr. Bordley of Baltimore, in a comparatively recent paper, has advised the same thing. In other words, both Dr. Redding and Dr. Bordley would have us in every given case of inflammation of the optic nerve, where no other cause can be found, open the posterior ethmoid and sphenoid cells. Now, gentlemen, are we not going a little too fast, especially in view of the fact that in a recently reported case in the literature there was immediate blindness following such a procedure? We should remember, as Dr. Jobson has pointed out, that between the optic nerve and the cavity of the sinuses there is but a very thin wall, and in opening the sinus it is easy to do irreparable injury. Again, the optic nerve at times transverses the sinus without any bony protection whatsoever. It seems to me these cases, as well as all others, should fall under the third classification made by Dr. Hitschler—those which occur in our own family.

Of course operative measures are often of service in visual affections due to sinus disease, and I would be the last to decry them. At this time, however, there seems to me to be a real need for conservatism.

Dr. G. C. Kneedler (Pittsburgh): It seems to me that in operating on the nose it is important to conserve it in as nearly normal condition as possible. If drainage through the ethmoids is to be instituted it is not always necessary to do a radical operation. In fact, I believe it is better to establish drainage and if necessary do a subsequent radical ethmoidectomy if the results are not secured.

Dr. Sullivan refers to frequent attacks of sinusitis in children. This condition, known to the laity as "snifles," is nearly always (except when due to foreign bodies) caused by an acute inflammation of the mucosa which frequently extends to the deeper cells and produces a chronic pansinusitis, in many cases involving the antrum, from which I believe a large number of our cases of ozena originate. This infection is largely carried through the tonsils and adenoids.

The x-ray is not always conclusive evidence in the diagnosis of sinus involvement, but must always be considered a help to be used before operating, that you may have a definite outline of the sinus involved, particularly the frontal sinus, which is not always present. If we attempt to operate without an x-ray picture we are working very much in the dark and are therefore liable to damage other structures. I believe it is always wise to have a preliminary picture made of all sinus conditions.

Dr. J. F. Klinedinst (York): Doctors Sullivan and Hitschler are to be commended for advising conservative treatment of infections of the nasal sinuses. Some over-zealous and inexperienced rhinologists are more inclined to do radical surgery of the nasal sinuses than to try local treatment. Because there is an infection within these bony cavities they think it necessary to bore out every cavity, often leaving the patient in a worse condition than before. It is surprising that there are not more cases of infection into the orbit and cranium when we consider the anatomy of these sinuses with their thin walls forming part of the orbit and cranium.

Many cases of sinus infection result in inflammation or congestion of the mucosa, causing temporary closure of the ostia. If you secure free nasal breathing and drainage by local treatment or by simple surgical operation within the nasal passages, in many cases the sinuses will take care of themselves and the inflammation will subside. Local treatments to reduce the turgescence of the nasal mucosa, followed by negative air pressure and the use of bland oil sprays will cure nearly all acute infections of the nasal sinuses.

Dr. B. Alexander Randall (Philadelphia): I think in this Society particularly we should not lose sight of the value of transillumination. It was in 1885, at the meeting of the State Society in Scranton, that transillumination of the antrum of Highmore was demonstrated by Addinell Hewson, Sr., years before this method, generally ascribed to Heryng, was put forward by the latter. In the simpler cases in the darkened room, even with a hand-lamp, you can frequently demonstrate an inflammatory condition of the Highmore and to some extent of the other cells; so we need not wait for the x-ray to obtain information at the first examination.

As to the optic neuritis following these cases, I have been observing it for thirty years, and it has been extremely interesting to see the precipitate manner in which the importance of attention to the posterior cells in these cases has come to be recognized. Also I reported to the American Ophthalmological Society some twenty-five years ago a case of successive ophthalmoplegia involving both eyes.

With reference to vaccines, they may have value; but I think a word should be said and repeated as to the usual value of atropin in so many of these acute cases. It is more marvelous in some ways than vaccines, particularly in severe inflammation of the antrum of Highmore; and I have seen such cases cleared up in three or four days by the use of atropin, even under unfavorable conditions of exposure.

Dr. Harvey M. Becker (Sunbury): I regret that there has not been another man besides myself and Doctor Davis to stand up and oppose suction of the nose. Mechanically, I think it is wrong. About five or six years ago I spent all the money I could raise to buy a suction machine that is now of no use. I think Doctor Davis did the same thing. The reason is that when you stop to think what you are doing you see you are defeating the very object you are trying to attain. In other words, we make the tissues swell by suction. Just as soon as you withdraw the air from the nasal chambers, there is lack of the resistance they have been used to ever since they were created, and what do they do? They naturally puff up and you do not have the drainage you are trying to obtain. I have quit it. It did not work mechanically. Two hours after you have used your suction apparatus on the nose—well, do not send the patient home; keep him in the office and examine him two hours after. True, to-morrow he may come back with the swelling gone down. But what of the twenty-four hours before he comes back to you? Just keep him in the office two hours the next time you use a suction apparatus, and see what you have done. I favor conserving the tissues. Let us think of the mechanism. This is a piece of machinery that cannot stand rough handling. You cannot tamper with your automobile and expect it to run, and you cannot throw anything out of gear in the human body and expect it to work. I hope I am not misunderstood.

Dr. H. Maxwell Langdon (Philadelphia): Some five or six years ago I had a case—it is the only one of the kind I know of, but it may point the way to the observation of others. It was a woman who had suddenly lost her vision in the right eye after an attack of influenza. There were no changes of the ocular makeup in any way, with the exception of pupil activity and the loss of sight. There was no change in any of the external ocular structures and the fundi of both eyes were normal. I asked Doctor George Wood to see her and his findings were as negative as my own. We sent her to Doctor Pancoast for x-ray investigation, and his findings were equally negative. The vision still remained totally gone, with no light reaction of the pupils of the affected eye and no consensual reaction of the other eye. The sphenoid was opened on that side, getting no pus, but with immediate improvement of the vision, which in seventy-two hours returned to normal. Now if you could have a more negative case than that I fail to see it, and yet I am absolutely sure if that woman's sphenoid had not been opened the eye would have gone on to irreparable loss.

It ill behooves an ophthalmologist to enter into this discussion in regard to suction, but I can think of five or six cases where there have been ocular complications of the sinuses, treated by suction for a long time, but I have never seen one of them cured. Every one of them came to operation.

Dr. F. M. Law (New York City): I should like to speak on this subject from the standpoint of the roentgenologist. The x-ray does a lot of good when it is properly used, and the discussions this afternoon in regard to coöperation are very opportune. Why not include the roentgenologist in that coöperation? How many times do we have a case come to the office with the simple request to have the head examined, saying nothing whatever about the symptoms or what you are looking for, or what you would like to prove? You expect a diagnosis from the plates without any information whatever to the poor roentgenologist. That is especially so in these cases cited this afternoon, particularly the one where the surgeon knew he had pus in the antrum, but the x-ray was negative. Why? You all know that the antrum is a cavity with an opening into the nose, and that cavity may contain thick pus; you know it is there for you have seen the pus coming from the ostium. You send that case to the roentgenologist, and on the way the patient blows his nose. After all the manipulations and the application of adrenalin and cocain he may very readily empty the antrum. The roentgenologist then gets a negative plate. On the other hand, he may get a positive picture where you have been able to obtain nothing by puncture. That x-ray cannot lie if properly made and interpreted, and if the picture shows a positive antrum after a negative puncture it means that the antrum is full of granulations, not pus.

This relation between the sinuses and the eye has created quite a good deal of discussion in New York, but we have changed our views in regard to the interpretation of these plates. The interpretation is now based upon the appearance of the ethmoidal septa and not upon the contents of the cells. Many of these cases have shown absence of septa, or unhealthy septa. These are the cases which, if operated without visible symptoms, have proved to be the most satisfactory from an operative standpoint.

I wish you would all learn to know more about your own plates, and discuss them with the roentgenologist. He knows what the shadows mean and he is supposed to know something about the pathology, and if you consult with him you will have better results from your x-ray examinations.

Dr. Samuel Cohen (Philadelphia): I am surprised that no one in this audience defended suction in the treatment of sinus diseases. Although, as claimed by my predecessors, it might be mechanically wrong, theoretically and practically it has a good defense. It diagnosticates sinus diseases; occasionally it may for several hours narrow the ostia, but by causing hyperemia, followed by leukocytosis it helps materially in curing these conditions. I find it a great benefit, so much so that at present I do not see how one could get along without it.

Dr. Davis (in closing): My inability at condensation prevented my reading some of the practical deductions from my experience, and the point brought out by Doctor Randall in regard to the use of atropin in sinus infection was along the same line that I particularly emphasized; namely, that vaccines do not take the place of other remedies in the treatment of acute sinus infections. They are an *aid* in the treatment of such conditions, the most important aid that we have, representing, so far as my experience goes, fully 50 per cent of the whole process of treatment; but no other measure of value must be omitted.

I would say further that I think vaccine therapy fits logically into the gap created by the retreating movement of surgical radicalism.

Dr. Sullivan (in closing): I think Doctor Hitschler's remarks should be printed and held before our eyes during our working hours and read before we sleep at night.

Doctor Wood speaks about using a Halle machine. I have used one for about seven years, especially where the walls of the maxillary sinus are bony, just as he said. I do not see any reason for removing any part of the inferior turbinal bone for drainage of the maxillary sinus, unless it is diseased or hyperplastic, or not functioning.

In puncturing the antrum I use the Davis trocar and canula. By using it you can find out whether the wall is bony and use your judgment. In a majority of cases it is not necessary to use a burr; a mastoid curette will remove all your wall under the inferior turbinate and you will have complete drainage.

I want to endorse what Doctor Davis says about vaccines, but I cannot agree with him in any way as to suction. My opinion was similar to his until I began to use the suction gauge. He probably is getting good results from vaccines and does not need suction, and when I go home I am going to use vaccines a little more extensively than before. We should not condemn a procedure until we use it properly.

Doctor Posey spoke of puncturing the sphenoid. I never punctured a sphenoid in my life. The sphenoid in Doctor Redding's case was diseased and had been found so upon examination. It was not opened up just because we felt there was a neuroretinitis. To my mind it was a coincidence. Most of these cases were posterior ethmoidal conditions and the sphenoid was opened because it was diseased.

Dr. Redding (in closing): Every surgical operation fails sometimes. Simply because a patient goes blind is no reason for stopping the operation, any more than you would stop general surgical operations because a patient happens to die.

MALNUTRITION AS A PRETUBERCULOUS STATE IN CHILDREN*†

JOHN D. DONNELLY, M.D.

PHILADELPHIA

During the past year or so, our attention has been directed towards the large number of children referred to us with the provisional diagnosis of suspected or insipient pulmonary tuberculosis. Many of these children were contacts with some member or members of their family, either past or present, who had tuberculosis.

Upon examining such children for the first time, it is well to keep in mind that tuberculosis is infectious and communicable. When those with active or open tuberculosis cough, the tubercle bacilli are thrown out in the droplets of the accompanying spray and when dried are collected and spread by dust, ends of skirts, shoes and the like. The child lying, sitting or crawling in such an atmosphere inhales these organisms; or it may be that they fall and accumulate upon the food which he eats. Under such conditions the risk of infection is very great. The danger of contact with tuberculous patients cannot be overestimated, especially when the contacts are children, ignorant and incapable of protecting themselves from overwhelming exposure.

Recent studies tend to show that aside from the mere presence of the tubercle bacillus in the body, other factors are necessary for the development of clinical tuberculosis.[1] Just what these factors are, is not as yet definitely known. Certainly the individual's power of resistance must be lowered. Whether this results from congenital or acquired local or constitutional causes (resulting from pathological states or physical abnormalities) is still an unsettled question.

Many of these children who are suspected of having tuberculosis are pale and undernourished, having in many instances soft and poorly developed musculature with little subcutaneous fat. They are decidedly underweight, ranging from seven to twenty-five per cent less than the average weight for a child of the same sex and height. Associated with these findings there are usually faulty posture and at times faulty bodily mechanics, limited chest expansion of varying degrees, flat chests, occasionally some degree of chest deformity and prominent abdomens. The majority of these children present the picture of overfatigue. Most of them have enlargement of the cervical glands, while a few show a mild general adenopathy.

In making our estimate of malnutrition we use the table of weights published by Dr. Emerson[2] and Mr. Manny.[3] Weight is taken as a guiding basis for estimating malnutrition as it has been found that the best single rule of gauging malnutrition is based upon the relation existing between the weight and the height and that a child weighing habitually 7% or more under the average weight for its height is not equal to maintaining itself in normal health.

We recognize a certain type of malnutrition which simultates tuberculosis in having lowered resistance and certain chest findings which are frequently associated with tuberculosis. This we term a pretuberculous condition for want of a better term. Many of our known tuberculous children passed through this pretuberculous state before reaching their present status. Children who have the physical findings of malnutrition, plus the tendency to undue prolongation of minor infections and who lack normal recuperative powers, we accept as having lowered resistance.

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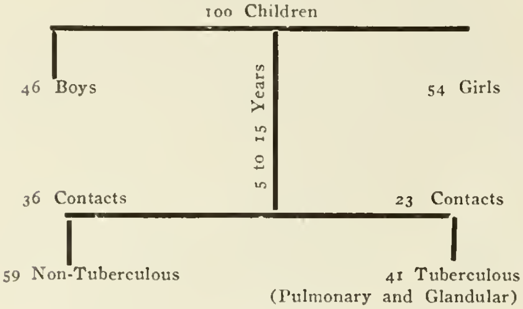
*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

†From the State Chest Clinic, Number Twenty-one.

We have studied one hundred consecutive children from among those who are under active observation in our clinic in an attempt to compare the malnutrition of the pretuberculous state with that of the tuberculous. Table I, in a diagrammatic form, shows the classification of these children.

TABLE I.



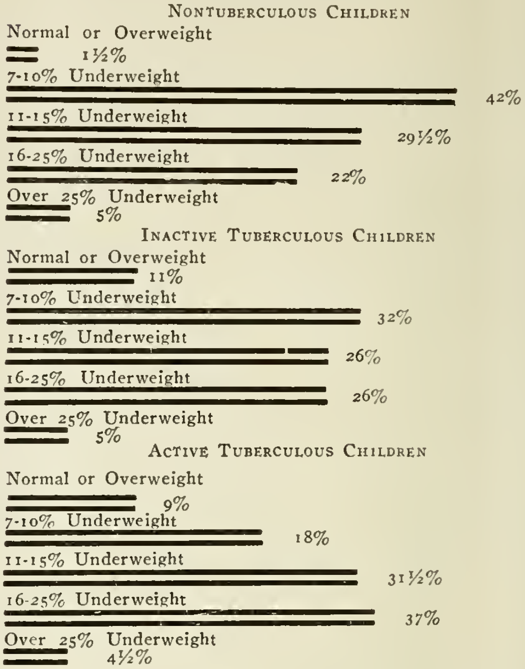
Classification of One Hundred Children Having Malnutrition.

The chief complaint usually is loss of weight with recurring cough. Further inquiry reveals the fact that the date of onset of the chief complaint goes back from six months to three years. We learned from the parents of these children that many of them had always been subject to frequent colds, from one to three annual attacks of sore throat and that "all bad colds developed into bronchitis. They exhibited Zahorsky's[4] juvenile type of respiratory resistance which at times approached the infantile type. However, there had never been fever among these children, except during some definite acute infection, such as bronchitis, tonsillitis and the like. Although coughs recurred, expectoration was not common. In some instances the onset of symptoms dated from a definite infectious disease, usually respiratory in kind, followed by fatigue which the patients never overcame. In other instances, fatigue had been the first symptom complained of. Of the respiratory infections, the influenza that occurred in the epidemic of 1918 occupies a most important position in relation to malnutrition and the pretuberculous stage in children.

Other factors influencing this group of children and which in some cases have been the principal underlying agents in reducing their resistance and causing a decline into this pretuberculous stage are: poor housing conditions, poverty, filth, lack of personal hygiene, high cost of simple foods, no wage-earner in the family or the wage-earner incapacitated through illness, and last but not least, those homes where the widowed or deserted mother must absent herself from her family all day while she attempts to earn their sustenance.

Table II is a comparison of weights among the pretuberculous, the arrested tuberculous and the active tuberculous children studied.

TABLE II.



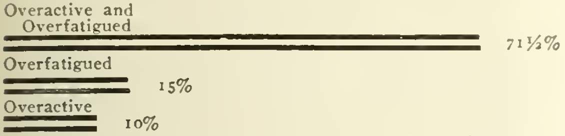
Comparison of Weights on Admission to Clinic

On examination, the chests of these malnourished (pretuberculous group) children present every variation from normal to that of a poorly developed and poorly expanded lung. Others exhibit the findings of a low grade subacute bronchitis, others show mild emphysema or diffuse peribronchial thickening and mottling which may be quite diffuse, not infrequently involving one or both apices, due to scars of an influenzal infection. Lapham[5] has pointed out that these changes with enlarged bronchial glands need not be associated with the disease called tuberculosis as they occur whenever secondary complications take place in the terminal areas of the bronchi, especially after influenza. As a rule the heart, abdomen and extremities, aside from loss of subcutaneous fat or poor musculature, present normal findings. The reflexes are usually prompt. The Von Pirquet reaction was not made routinely because a positive reaction without symptoms and other findings of tuberculosis in children, seven years or older, can not be accepted as interpreting a tuberculous lesion of any size. Nor is a negative reaction absolute proof of freedom from tuberculosis. Mioche[6] claims that the reaction in older children is not a reliable index of a tuberculous process undergoing evolution, unless supported by clinical evidence.

Apart from the lungs, the more common physical defects found among these children were errors of refraction, inflammatory changes in the eye, deviated septa, chronic rhinitis, adenoids, hypertrophied and diseased tonsils, dental caries, flat chests, exaggerated infra- and supraclavicular fossæ, nervous instability and enuresis, faulty posture and round shoulders.

Table III shows the relative percentage of children who were overactive or overfatigued or both.

TABLE III

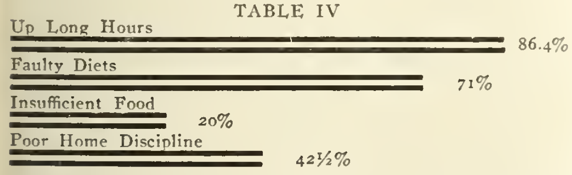


Relative Percentage of Children Who Were Overactive or Overfatigued or Both Overactive and Overfatigued

Overactivity may be described as that form of activity so commonly found in the so-called "restless type" of child who is always on the go, runs instead of walking, and rarely relaxes while awake; or in the child who is up long hours, unbroken by rest, during which time much effort and energy is consumed in play, work or study. We consider as long hours, fourteen hours or more. It is not easy to define clearly what we mean by fatigue, even though it be so plain that it can be readily recognized. Fatigue in the sense in which it is used here is meant that state resulting from repeated or prolonged periods of effort, which at times may border on overexertion and from which children may not fully recover, due to insufficient relaxation during the rest periods that follow, as well as those showing an "effort syndrome" or whose bodies are not sufficiently strong or properly developed to maintain the normal activities of healthy normal children. Veeder[7] has pointed out that it is almost impossible for a child to maintain a sustained period of effort as an adult does, but the sum total of these brief periods of activity in children is seemingly much greater than is the sum total of effort in the adult. It will be seen that a little over seventy per cent of the children were both overactive and overfatigued, a combination which in time will produce profound changes in any child.

Table IV shows the relative percentage of children who were up long hours during the day without rest as well as those under poor home discipline and who were receiving insufficient food or who were on faulty diets.

TABLE IV



Relative Percentage of Children Who Were Up Long Hours During the Day, Those on Faulty Diets or Who Were Receiving Insufficient Food and Those Under Poor Home Discipline.

In a clinic of such a character as ours where a large number of patients are referred to us for diagnosis, it is impossible to enter all these children in our nutritional clinics. However, as fatigue is the one glaring and most universally found point in the histories of these children, we have centered our energies upon the removal of this factor from among our pretuberculous patients. This is best accomplished by limiting the child's activities. Running, jumping and all other strenuous exercises are prohibited. Sources of fear, worry and anxiety are removed as far as possible. Rest in bed for one or two hours daily is prescribed, to be taken at specified times.

We then begin to correct faulty posture and round shoulders. The importance of posture and its effect upon health has been well shown by Talbot and Brown,[8] Dickson[9] and others. Exercises are given, designed to strengthen the chest, back and abdominal muscles so that the body is held erect with the head up, shoulders squared, chest up, rounded and full, abdomen held in and knees straight. Furthermore, the child is taught to carry himself properly while walking and how to rest. If this latter be neglected he will tend to slouch. According to the degree of faulty posture three to nine months or more may be consumed with these exercises before the child has regained a normal posture and carriage. The results are very gratifying. Chest expansion is increased, supra- and infraclavicular fossæ disappear, the back is straight, muscle strain is relieved, visceral ptosis prevented by proper abdominal support from the recti muscles, ventilation of the lungs is improved with its attendant improvement in thoracic circulation, all of which brings about a marked improvement in the general color, appearance and well-being of these children.

Home hygiene is improved and supervised, diets are corrected and balanced. When possible, milk is added to the diet till the child is taking a quart daily. All the little patients are put upon the following routine schedule:

Arise 7:30 a. m.

Take cold bath or cold sponge, dry self thoroughly with rough towel, dress.

Twenty (20) big, deep breaths before open window before breakfast.

Three full meals a day.

Four glasses of milk daily, either after meals or between meals.

Put to bed every afternoon at 1 p. m. and kept there till 3 p. m.; if attending school, put to bed from 5 to 6 p. m.

Must be in bed at 8 p. m.

No running, jumping, roller-skating nor other strenuous exercises.

Never permit child to become tired.

Keep out in fresh air and sun as much as possible.

On rainy and stormy days make children wear rubbers and see that they are dressed in warm clothing.

Do not give children tea, coffee, pies, cakes, cinnamon buns, doughnuts, pastry nor fried foods.

Give them lots of milk and food made out of and with milk, bread and butter, tender meats, potatoes and green vegetables.

We make variations in this schedule from time to time to meet the individual's requirements. All faulty habits are corrected and physical defects removed. All sources of infection are removed. Necessary x-ray and laboratory work is done when indicated.

When all this has been done our patients (if not actively tuberculous) are free to gain in both resistance and weight. The repair of body tissues is a slow and gradual process, the result of cellular growth and reproduction which may be favored by rest, good hygiene, proper diet and exercise. Some of our children who did not regain their normal weight did, however, increase their resistance, as demonstrated by their freedom from respiratory infections, their feeling of well-being, firm muscles, increased mental activity and absence of fatigue during the winter and spring months. It is even more remarkable that with few exceptions the children in our nutritional classes, half of whom were inactive or questionable incipient cases of tuberculosis, did not miss a day of school from November to June through illness.

SUMMARY

Malnutrition may be caused by many other factors than tuberculosis.

In any group of underweight children, those with active tuberculosis will show as a class a greater degree of underweight.

Certain children have physical findings in the chest which might be interpreted as of tuberculosis without the clinical and symptomatic manifestations of this disease. When such findings are accompanied by malnutrition, lowered resistance and fatigue, the patient may be said to be in a pretuberculous state.

Fatigue, faulty posture and malnutrition are the strongest factors in lowering resistance, preparing for and developing active pulmonary tuberculosis.

Under proper care many of the chest findings improve or disappear as health is recovered.

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1828 Pine St.

DISCUSSION

Dr. Thomas Klein (Philadelphia): The study of this type of child is extremely important and vastly interesting. We can all readily understand that this is the type of case which is ripe for infection. You all know that our state of health is entirely created by the control of the vegetative nervous system. As long as the vagus portion remains in control we have a feeling of well-being. When the sympathetic system predominates we then get the clinical picture which we have here of a poorly nourished, anemic, overfatigued, poorly developed child. I think by calling these children sympathetic preponderance cases we can explain the benefit which we get by systematic exercises. By toning up the vagus system, by the removal of focal infection, correcting faulty posture and giving them simple calisthenics or corrective exercises we gradually stimulate the vagus to regain its control over the sympathetic system. This will establish a pathologic basis for recovery.

It is perfectly surprising, the number of physical findings that you can get when these children have faulty postures because of a poorly expanded or atelectatic apex. You can get any physical finding that you wish. The tactile fremitis is increased, percussion note impaired, the breath sounds are bronchovasicular and râles are present. However, with the straightening of the shoulders and the taking of a few deep breaths, with possibly a few coughs, the lungs will reëxpand and the physical findings entirely disappear. It is for these reasons that we rarely ever make a diagnosis of tuberculosis upon the first examination. In addition to this type of child we also have another group of so-called chronic bronchopneumonias. These children usually have diseased tonsils, bad teeth, sinus disease or some other infectious process in the upper respiratory tract that will not clear up until the upper respiratory infection has disappeared.

NUTRITION CLASSES FOR CHILDREN*

SARAH D. WYCKOFF, M.D.
WILKES-BARRE

In these days of the rebirth of human society every thinking person desires to work for the new heaven and the new earth wherein dwelleth righteousness. The only way to achieve such large results is to work to help people one by one. As William James says, "The eternal forces of Truth always work in the individual way, * * * with the invisible molecular forces that work from individual to individual." The time of precious opportunity for the individual comes when each new child brings into the world new energies, new possibilities. The most inspiring, the most fruitful work one can think of is some share in awakening and in guiding these new personalities, the quality of which will help to determine the quality of our country and of the world. Every child is developing constantly into some kind of a person, and the character of that person is determined by the actions of the adults who touch his life. If the little children now living were raised right, the world's problems would be solved in one generation.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

This is the true reason for our interest in the nutrition of children. The general unfitness to carry on that one commonly sees in adult life, and which was glaringly revealed in the examination of supposedly healthy young men for military service, begins in childhood, and is threatening the welfare and progress of our nation and race. In work for the prevention of weakness and diseases many details require care, but it is beginning to dawn upon us that instead of cutting off the branches one by one it is better to destroy the wrong growth at the root and replace it with a good one by making the child strong and trained to live right so that he will keep strong.

The unfitness commonly expresses itself as malnutrition. Frequently the seriousness of this condition is not realized, those responsible for the care of the child considering him well. Sometimes it is mistaken for mental deficiency, which it may cause temporarily. It is the great cause of the expense of reëducation in the public schools, which was reported to be $120,000,000 last year, besides the more serious loss of precious time and quality of human life.

Another mistake commonly made is that poverty is the great cause of malnutrition. The condition found in Grand Rapids, Michigan, is typical: In well-to-do districts 40 per cent of the children were undernourished to such a degree as to need treatment, while in the poorer quarters the proportion was 20 to 25 per cent. Malnutrition is not generally due to lack of food provided in the home, though frequently caused by the children taking insufficient or unsuitable food, as well as eating too rapidly and irregularly. These children usually dislike wholesome food, and crave sweets, tea, coffee, etc. Insufficient sleep and fresh air, fatigue, nervous excitement due to scolding, too many parties, movies, Sunday newspapers, etc., are prominent causes. Defects in body, in environment, in activities of life, in personality, all details require examination and correction. But the large, the basic cause is lack of ideals and discipline in the home, with ignorance of the laws of health and healthful living, the child's life being determined by the question "what I want," instead of "what is right." Malnutrition in children is intertwined with all the old evils and wrongs. The hope the world has of escaping from these is in training the new generations as they come.

Dr. William R. P. Emerson of Boston, a great leader in this work, says: "After long experimentation we have found that the best single rule of selection for malnutrition is based upon the relation existing between weight and height, and that a body weight habitually 7 per cent or more under the average weight for the child's height is not equal to maintaining him in normal health." Of children examined in various places, 65 to 95 per cent have been found underweight. One-third, on an average, of all children over the country are 7 per cent or more underweight, and require treatment. No wonder the nation's vitality is being undermined.

A few years ago a nutrition clinic for children was started at Wilkes-Barre, Pa. We worked earnestly, with detailed diet lists, home visits, exhortations and health teaching at dispensary visits, all with small effect. Last fall we decided to try the Emerson plan. A class was formed and carried on through the year with the efficient aid of the state nurses. Our experience leads us to add enthusiastic testimony to others that this is the best method yet devised. Anyone will find it well worth while to read the full description Dr. Emerson gives in his set of pamphlets, which may be obtained from 44 Dwight St., Boston; and also his articles in the *Woman's Home Companion*, beginning August, 1919, which may be secured as reprints from the Crowell Publishing Company, 381 Fourth Ave., New York City. This company also publishes a most convenient Table of 100 Calorie Portions of Food, for use in the class. We arranged the following plan for the children in the class:

DIRECTIONS FOR CONDUCTING AN EMERSON NUTRITION CLASS

Have each pupil thoroughly examined and defects corrected as far as possible. Kept under continuous medical supervision.

A. Daily Regime:

7 A. M.	Rise, cold sponge.
7:30 A. M.	Breakfast. Home cooked cereal (oatmeal, mush), with milk. Cocoa or milk to drink, bread and butter, egg and fruit.
10 A. M.	Lunch, 250-400 calories. Sandwich of meat or a meat substitute, with milk if possible, or an apple or orange.
12 M.	Dinner.

12:30-1 P. M.	Rest.
3 P. M.	Lunch, same as at 10.
4-5 P. M.	Rest.
5-6 P. M.	Outdoors, moderate exercise. No running nor strenuous games.
6-6:30 P. M.	Supper.
7:30-8 P. M.	In bed. Comfortably covered. Wide open windows. Lights out.

B. Diet:

No pie, cake, pickles, mustard, tea, coffee, fried or indigestible foods.

Simple sweets after meals only, never between meals.

Meat, and at least 1 pint milk daily, with other wholesome foods, including cereals, fresh fruit and vegetables, making 3,000 to 4,000 calories.

No meal to be eaten in less than one-half hour by the clock.

4 to 6 glasses water to be taken daily, between meals.

C. Rest:

Rest means entire rest in bed, with open windows, or out doors comfortably wrapped. Small pillow under shoulders. None under head.

D. Records:

Kept by patients 2 days each week:

1. Food,
   Record solids by tablespoonfuls.
   Record liquids by ounces. 16 ounces, 1 pint.
   Record number pieces bread size 3x3½x1 inches.
   Record number pieces meat or fish.
2. Activities,
   Everything done in day, exactly, with exact time.

E. Class Management:

Class meets weekly. Weight recorded on individual charts. Gold star awarded patient making highest gain for the week. Red star awarded for correct lunch twice daily for the week. Blue star awarded for correct rest twice daily for the week. Diploma awarded on reaching normal weight line.

The children were given blanks like these on which to keep their records:

Nutrition Clinic

Name ....

Date ....

FOOD RECORD

Articles	*Amount*	*Calories*
Breakfast		
..... to		
Lunch		
..... to		
Dinner		
..... to		
Lunch		
..... to		
Supper		
..... to		

Amount of water taken

Activities

Everything Done in Day

TIME	OCCUPATION
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
.... to	....
etc.	....

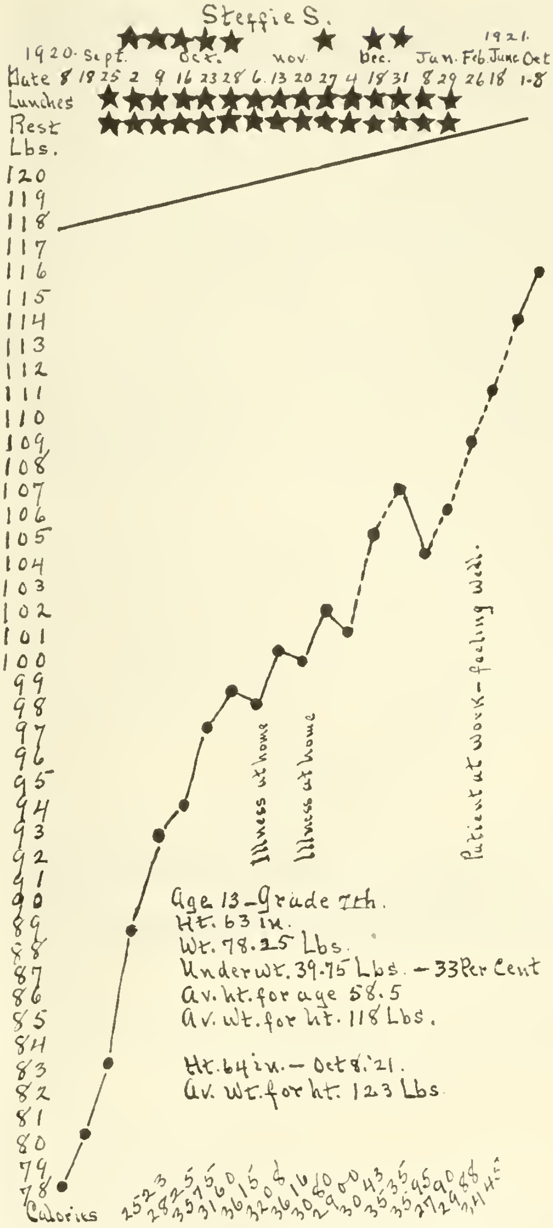
I conducted the class every Saturday morning, going over the daily records of each member and examining him, if necessary, to point out the reason for the gain or loss and to give to each one for the next week concrete directions necessary for a gain. I often asked the children to advise one another and to criticize their own records and sometimes to conduct the class. This always aroused vivid interest and sometimes amusing but really capable advice, given with a conviction that penetrated, though in a kindly way. Competition was some incentive, but I felt that the greatest advantage of the class method was the spirit of fellowship which developed. Their ideas about right and wrong in ways of living became clear, and a public opinion developed which helped to hold individuals up to the mark, desiring the approval of their fellows. This was strongly evident with a newcomer into the class. If, in response to questioning, he stated he drank coffee for breakfast or didn't eat oatmeal because he didn't like it, or went to bed at eleven o'clock, a spontaneous chorus of horrified "ohs" from the class astonished him and mortified him to the point of conviction and reform on the spot. I sometimes asked them which member of the class they were proudest of that day and why. This brought home to them sharply some suggestions for themselves, and made them eager to be the one the class was proud of next time. They became warm friends. The flowers which were sometimes given to the gold star member of the morning were always voluntarily shared with the others.

The children are always eager to learn their weights. An exhibit of 100 calorie portions of food interests the mothers and children, besides enlightening them about comparative food values, but the vivid interest necessary for success, can be awakened and held only in response to a warm personal interest in each child by the worker in charge. There must be friendship for each child as an individual, to direct his play, to look after his emotional and mental hygiene. Each child must be regarded as a whole personality having body, mind and soul. For healthy, happy, effective life he needs to grasp early some high and definite ideal as the goal for his personal life, and to learn to order the day's activities toward that end. Children respond to ideals quickly, and especially at the age which is best for these classes (10 to 14), are more eager to learn and to work for them than for prizes, and it is surely a more permanent help to them.

After a child has been studied as an individual, he is then helped to order his whole life on the lines of normal activity and growth. I often tell them a whole is made up of all its parts. A wholly healthy child is made by obeying all the laws of health, psychical as well as physical, all the time. Then comes the training to form habits. Here lies the especial value of the class method; it forms health habits in the children. It not only educates them in details of matters of health, but arouses their interest in living by them. So comes the element of permanency and self perpetuation which makes this work enthusiastically worth while. There is no short cut to success; the work must be individual, detailed, and patiently and actively persevering, overcoming difficulties as they come up, one by one, until the desired end is achieved—a healthy, happy child, trained in the way to live to keep healthy and useful, and inevitably then convinced and eager to teach others.

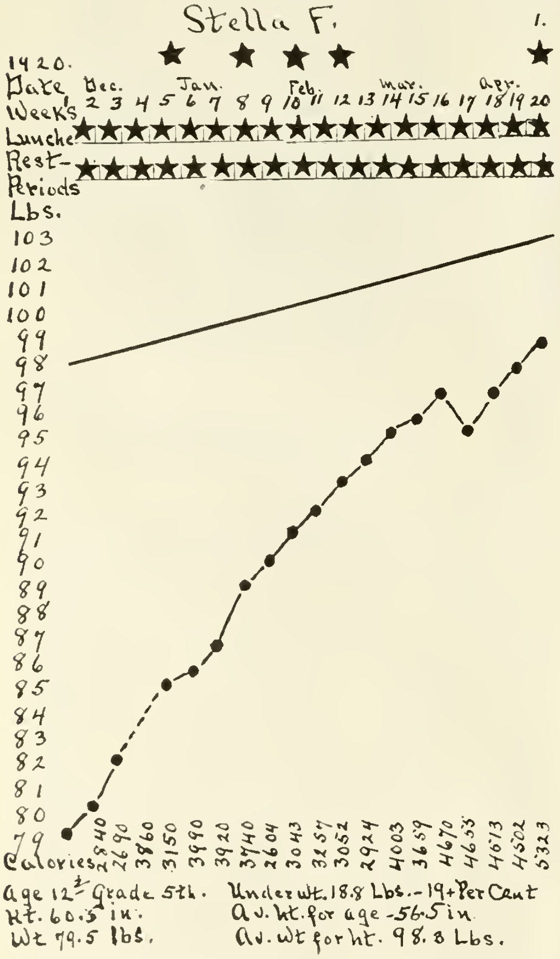
Visiting in the homes is important and should be done by the nurse who assists with the class work. She should have a sympathetic and intelligent interest in the mothers and children and in the adjustment of home life to the needs of the growing child. The success of the whole undertaking depends fundamentally upon the strength of personality and warmth of interest in the children of the doctor and nurse in charge.

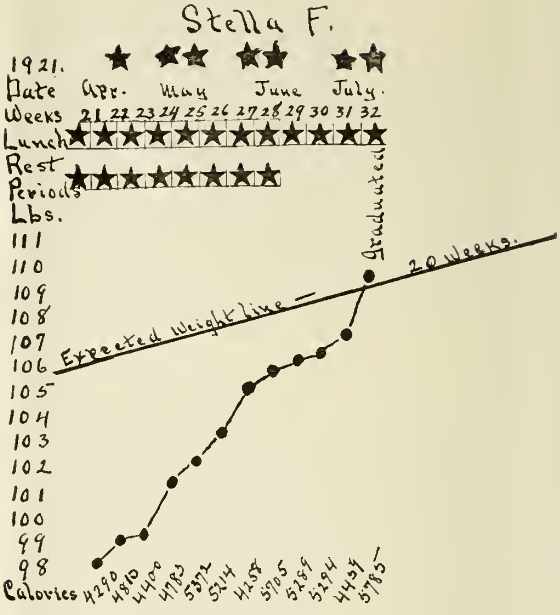
Some of our cases suggest the value of the nutrition class as a substitute, in some instances, for the tuberculosis sanatorium, saving the state much money and the patients separation from home. Steffie S., a girl of 13, came to the dispensary in very poor general condition and was diagnosed by a dispensary physician as a case of pulmonary tuberculosis, moderately advanced. He urged her to go to a sanatorium, which distressed her exceedingly. She said she was willing to do anything at all rather than be compelled to go away. As an experiment, I admitted her to the nutrition class, having her rest 8 hours a day, besides 11 hours in bed at night, and take food up to 3,000 or 4,000 calories. She weighed 78¼ lbs., being 33 per cent underweight. The first week she gained 5¼ lbs., the second 4 lbs. As soon as she became stronger she helped in her home and rested only the regular time. She added to her gain regularly, reaching 33 lbs. in 38 weeks. Her mother spoke no English. She never visited the class nor gave Steffie intelligent coöperation. She is largely an example of what a child can do by herself when she makes up her mind. She also demonstrates the value of some of the foreign dishes. She liked particularly a mixture high in calorie value which included carrots, beets, potatoes and sour cream. We permitted this and similar food, allowing the children to fol-



low their tastes as far as possible, insisting only that the diet be harmless, that it include the necessities and be sufficient in quantity. At present she weighs 114¼ lbs. and is working regularly. She is now classified "disease arrested."

Another case, Stella F., has been under treatment at the dispensary since she was four. She had incipient pulmonary tuberculosis, complicated with mitral insufficiency. She was in poor condition and even with the care of a good mother, made no progress. In September, 1916, she was admitted to a state sanatorium, where she gained 10 pounds in 7 months, which she lost after coming home. Two months later she returned to the sanatorium, where she gained 8 pounds in 13 months. She quickly lost this also after coming home, and continued to do badly. She would not follow instructions about rest and diet and insisted upon wrong food and late hours. November 23, 1920, her tonsils and adenoids were removed. On December 4, 1920, I persuaded her to join the nutrition class. She was then aged 12, and weighed 79½ lbs., 19 per cent underweight. The effect of the class influence on her was magical. She became entirely docile to instructions and boasted of liking the catmeal, milk and wholesome food she had previously spurned, and would hurry home from parties to be in bed at 8 o'clock sharp. She attended school regularly and managed her affairs so skillfully that she took violin lessons and helped some with the housework, besides carrying out all the requirements of the Emerson class method. You can see by the chart her regularity of gain, until March 26, 1921. She then suddenly became nervous, lost appetite and did not sleep well. After careful investigation I was convinced that the sole cause for this was the overheating of the school room during the unusually warm spring weather we were then having. I asked her to read the thermometer in the school room morning and afternoon the next week and make a record of it, which she did, with the following results: (I copy her record exactly)





	Morning Temp.	*Afternoon Temp.*	
Monday	80	75	Monday
Tuesday	85	80	Tuesday
Wednesday	70	75	Wednesday
Thursday	75	80	Thursday

I had her stay at home for a few days, out on her upstairs porch, where she promptly began to gain and felt well. Regularity at school immediately brought back her symptoms. I then directed her to stay at home two days each week, and more if she felt nervous. This she did, sometimes missing a whole week at a time, but staying well until school closed in June. Her average in school work was 96 3/9, the highest in a class of 25. She graduated from the nutrition class July 9, 1921, having grown 1½ inches, and gained 30 pounds in 31 weeks. Her excellent mother, who helped her constantly at home, and came with her to the class every Saturday of the 31 weeks, deserves much credit. I have described her school experience in detail, because it is unfortunately typical, and cries aloud for remedy. Stella's rapid climb to health made her a marked pupil in the school. She proudly gave out much good information and advice to the others and radiated strong influence for right habits on all who knew her. When she told me of her highest average, she said there was another girl in the class who hadn't missed a day's school all year, but she didn't pass, had St. Vitus' dance and was "awful skinny."

As a contrast let us consider Ada May S., also aged 12. She also had pulmonary tuberculosis, moderately advanced. She had spent 4 months at a state sanatorium, where she had gained 11¾ pounds, most of which she lost after returning home, 24 per cent underweight. When she entered our class, she showed the typical hollow chest, "angel" scapulæ, prominent abdomen and thin limbs. Most underweight children have a sad, rather listless expression, but she looked so dull and was so persistently silent and sad and unresponsive that she was considered by most who knew her to be rather feeble-minded. She was therefore examined by an expert who was visiting Wilkes-Barre. I quote from his report:

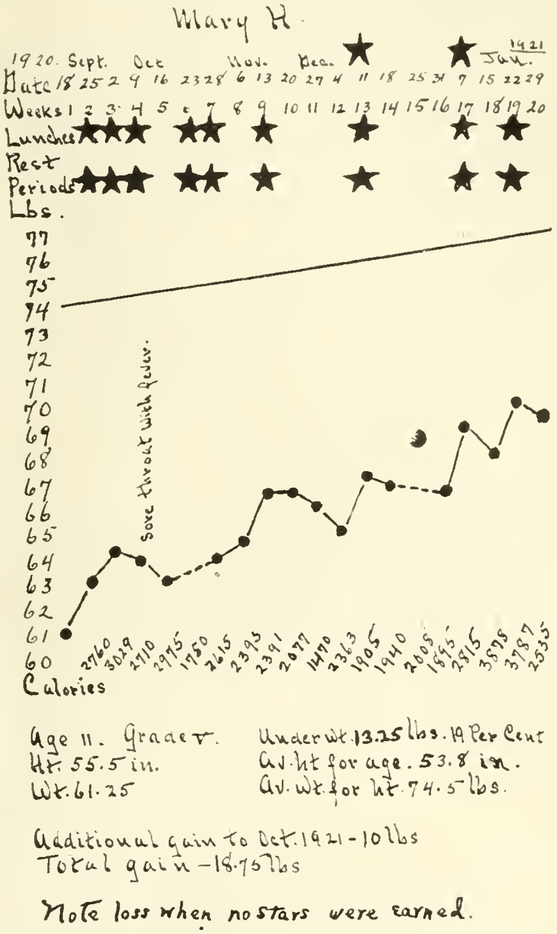
Problem: Is Ada May's slowness in school due to her physical condition or to mental incapacity?

Diagnosis: Normal mentality, very slightly below average. Primarily a case for medical care. Retardation due principally to physical condition.

Recommendation: Emphasis under care of physician is more important than progress in school work at this stage in her development.

Her mother never visited class or dispensary, did not provide milk or coöperate in any way with her treatment. She was kept in school against our advice, besides helping with the housework at home and the care of several younger brothers and sisters. She seemed not to know how to play, her only enjoyment was the movies. She sat up late at night, ate little and only as she liked. She gained 3¼ lbs. in 28 weeks. By persistent teaching, was gaining steadily, however, in interest, intelligence and encouragement, and when the class closed in July her health habits were reformed, her outlook on life normal and we felt this was the sure foundation for gain in weight in the future. She went into the country for a visit and gained 6 pounds in a short time. This case shows also how malnutrition sometimes simulates feeblemindedness and causes extra expense for reeducation in the schools; and also the necessity for, and the reward of patient perseverance with apparent failures. It illustrates also the benefit of a change of place.

Mary H., aged 11, with incipient pulmonary and glandular tuberculosis, 19 per cent underweight, did not gain, until we discovered that her mother insisted on closed windows at night, and convinced Mary herself of the truth, so that she rose and opened them; and induced her Uncle George, who visited her nearly every Sunday and brought enough candy to last for the week, which spoiled her appetite, to bring her fruit instead. She grew 1¼ inches and gained 18¾ pounds, rising from 19 per cent to 4 per cent underweight. She also attended school and helped care for three younger sisters. There was marked improvement in her outlook on life.



Age 11. Grade V.
Ht. 55.5 in.
Wt. 61.25

Underwt. 13.25 lbs. 19 Per Cent
Av. ht for age. 53.8 in.
Av. wt. for ht. 74.5 lbs.

Additional gain to Oct. 1921 - 10 lbs
Total gain - 18.75 lbs

Note loss when no stars were earned.

Catherine M., aged 10, had incipient pulmonary tuberculosis. She was an unusually bright, original child, with a friendly disposition. She absorbed all the ideas, except rest, with a thoroughness and a sparkle that made her a lively help with the others. After achieving reforms in her diet and other particulars it was undoubtedly only her irrepressible overactivity that prevented her from reaching normal. She gained 10¾ lbs., which reduced her 15 per cent underweight to 8 per cent. It remains for us to teach her to rest, in our class of this year. She was one of the many experiences in the class that demonstrated clearly the necessity of rest for gain in weight as well as for recovery from other abnormal conditions.

Thomas C., aged 14, came into the class room one day simply on an errand. He and his family thought his health and general condition excellent. We weighed and measured him and found he was 11 per cent underweight. He grew 1¼ inches in height and gained 8½ lbs., or 184 per cent in excess of expected gain, in 23 weeks. He is now 7 per cent underweight. He had no defects and was the only normal child in our class. He really tried hard. His comparative slowness in gaining shows how important it was for him, and many another overlooked and apparently well child in similar condition, to be examined and started on the right road to adult vigor.

Each case furnished some especially enlightening points. We found that malnutrition with its cure is a many sided affair. Altogether there were 10 girls, who averaged 327 per cent over the expected gain, and 6 boys 292 per cent, making the class average 319 per cent over their normal expected gain. The table of our class follows:

COMPARISON OF ACTUAL AND EXPECTED WEIGHT GAINS

NAME	Age at Entrance—Years and Months	Weeks in Attendance	Per Cent Under Weight	Total Actual Gain—lbs.	Total Expected Gain—lbs.	Per Cent Actual of Expected
Girls						
Evelyn S.	7-6	15	10	1.50	1.23	121
Hannah L.	8-7	10	15	2.25	.91	247
Mary S.	9	5	26	1.50	.47	319
Catherine M.	10	48	15	10.75	5.07	210
Margaret D.	10	24	21	5.50	2.53	217
Mary Hav.	10-6	12	12	2.00	1.26	158
Mary H.	11-2	51	17	18.75	6.47	289
Stella F.	12-1	31	19	30.00	5.48	547
Steflie S.	13	46	33	33.00	8.80	375
Amelia C.	14	13	20	8.00	2.39	347
Totals				113.25	34.61	327
Boys						
Clement H.	7-0	6	26	3.25	.49	663
Samuel F.	8-0	4	18	1.00	.38	263
Edward M.	7-1	13	10	1.25	1.07	116
Joseph C.	11-8	15	30	7.25	1.52	476
Thomas C.	14-4	23	11	8.50	4.60	184
Allen N.	11	39	7	6.75	1.52	444
Totals				28.00	9.58	292
Total boys and girls				141.25	44.19	319

One mother, when she brought her boy to the class, announced that he could not eat an egg because it made his nose bleed, and that she had encouraged him to play ball all summer to develop his muscle. Other details in Josephs life were arranged to match these. He had pulmonary tuberculosis moderately advanced, and mitral regurgitation and was 30 per cent underweight. In a surprisingly short time she absorbed the new teaching and carried it out so well that Joseph gained 7¼ lbs. in 15 weeks, 476 per cent in excess gain. She was delighted and announced to the other mothers in the class one morning that now she was raising her eight that way. She added that her neighbors were asking her questions about the improvement in Joseph and she was telling them how to do it.

So growth was the sign of the life in the idea in Wilkes-Barre. The light was spread not only by the mothers and children of the class, but also by social workers and teachers and mothers who visited the class and applied the ideas to children under their care. People from various parts of the valley became interested, and 15 other nutrition classes were started as an outgrowth from the one at the state clinic, most of which, I am glad to say, were in the schools, parochial and public. Three others are to be started this fall. Reports from these classes are excellent, although the workers are all untrained in nutrition work. This is strong evidence of the intrinsic value of the Emerson method. One worker reported that every single member of her three classes had gained over the normal gain, and that one was just graduated who made 11½ lbs. in 19 weeks. The average of a group of 4 other classes in public schools started under handicap was 172 per cent excess over normal. The poorest class average showed 160 per cent over normal.

In conclusion I join those who urge the vital, and the fundamental importance of nutrition work for children, and who believe that the Emerson class is the best method yet developed. This should be made an integral part of the system of health work in the public schools. It belongs there, not only for the good of the children, but also to avoid waste of public money in reëducation and to make better citizens. As Dr. Emerson says, "The school system should not by its disregard of the physical condition of its children increase malnutrition. It should graduate its children physically as well as mentally fit, thus eliminating malnutrition as an unnecessary element of national weakness." It belongs chiefly to physicians to awaken, educate and support public interest to this end.

68 W. South St.

Summer Class—State Clinic No. 1

COMPARISON OF ACTUAL AND EXPECTED WEIGHT GAINS

NAME	Age at Entrance—Years and Months	Weeks in Attendance	Per Cent Under Weight	Total Actual Gain—lbs.	Total Expected Gain—lbs.	Per Cent Actual of Expected
Girls						
Violet M.	6-7	9	14	2.25	.7425	303
Anna P.	9-10	6	20	2.00	.566	353
Helen A.	10-11	10	14	2.25	1.056	213
Mildred A.	12	5	10	6.00	.884	667
Anna P.	12	8	13	2.25	1.415	159
Albina H.	12-2	5	13	1.25	.884	141
Mary N.	11	8	20	4.00	1.015	394
Margaret W.	11	9	16	5.50	1.141	482
Valeria S.	11	5	25	1.25	.634	197
Esther H.	8-5	1	11	1.00	.0918	1089
Florence W.	12-3	1	14	.75	.1768	424
Totals	......	......	......	28.50	8.6061	......
Average	10.6	6.09	15.4	......	......	331
Boys						
William B.	10	8	18	4.25	.89	477
Emerson F.	12-9	9	18	5.50	1.07	514
Nicoline A.	9-4	5	7	1.25	.49	255
John S.	12-1	9	21	5.25	1.07	490
Totals	......	......	......	16.25	3.52	......
Average	11.04	7.7	16	......	......	461

Summary

11 Girls						
Totals	......	......	......	28.50	8.6061	......
Average	10.6	6.09	15.4	......	......	331
4 Boys						
Totals	......	......	......	16.25	3.52	......
Average	11.04	7.7	16	......	......	461
Totals	......	......	......	44.75	12.1261	......
Average	10.82	6.89	15.7	......	......	369

BELOW EXPECTED GAIN

NAME	Age at Entrance—Years and Months	Weeks in Attendance	Per Cent Under Weight	Actual Gain—lbs.	Expected gain—lbs.
Girls					
Genevieve M.	8-8	8	7	.50	.73
Anna D.	13	2	16	.25	.38
Sophia H.	10	5	10	‡.50	......
Frances M.	8-6	*	9	......	......
Mary B.	10	*	7	......	......
Helen B.	8	*	8	......	......
Boys					
Albert W.	9-10	†1	9	§	......
James A.	8	†1	7	§	......
Peter Y.	13-4	6	8	‡.75	......
Joseph K.	12-3	*1	11	......	......

*One visit; did not return.

†Two visits.

‡Loss.

§Stationary.

MINERS MILLS NUTRITION CLINIC

NAME	Age at Entrance	Weeks in Attendance	Per Cent Under Weight	Total Actual Gain—Ounces	Total Expected Gain—Ounces	Per Cent Actual of Expected
Girls						
S. Steligo	14	6	18	6.66	2.95	225
N. Kollokus	13	5	16	8.00	2.43	329
A. Smolligan	13	5	29	4.80	2.08	155
C. Boylan	12	5	23	5.53	2.83	192
L. Ecbici	10	6	7	6.00	1.69	355
P. Brisnak	11	22	11	6.72	2.03	331
P. Mally	11	13	9	3.69	2.03	181
H. Woitas	12	18	11	9.33	2.83	329
I. Boylan	11	13	9	3.45	2.03	169
A. Bagonis	12	26	8	7.00	2.83	247
C. Burch	11	20	7	6.00	2.03	295
J. Holden	11	19	7	9.67	2.03	471
Totals	......	......	......	77.85	28.79	296
Boys						
M. Malochik	13	4	14	8.00	2.43	309
G. Rae	12	19	13	2.52	1.91	131
Totals	......	......	......	10.52	4.34	231
Total of Boys and Girls	......	......	......	......	......	263

DISCUSSION

Dr. Charles H. Miner (Wilkes-Barre): Dr. Wyckoff was especially well qualified to carry on this class as she had been working for several years to raise the standard of the nutrition of children in the public schools. She first conducted a nutrition class at the state clinic, with the emphasis laid almost entirely on the proper diet, which was only partially successful. After Dr. Landis presented his paper describing a clinic at the Phipp's Institute, conducted after the method of Dr. Emerson, she decided to study the Emerson technique and carried it out with great detail and infinite pains in a new class, which was wonderfully successful.

To conduct a successful nutrition class there are certain requirements:

1. A physician with a knowledge of all the details of the proper method and the essential food values, who must have a strong personality and show great enthusiasm in the work.

2. The assistance of an intelligent, tactful nurse in the clinic, who will also visit the children in their homes and persuade the mother to coöperate in every way with the clinic in having remedial defects removed and help in securing the proper diet and rest periods.

Some nurses can conduct a nutrition class alone, after the preliminary examinations have been made, but only after they have had training under the personal instruction of a physician conducting a well established class. The counting of the food calories taken by each child for two days each week is a very time consuming detail, but must be done by the nurse until she has learned the method. Later it is not necessary to do it for all the children regularly but it must be done for those children that fail to gain.

The complete physical examination of the child and the removal of all remedial defects is necessary, so that the child is free to gain.

The simple outlining of diets and prescribing the ordinary amount of rest fails, as a rule, to improve the situation, although the directions are carefully carried out. After observing the daily life and habits of children, we come more and more to the conclusion that fatigue is the basic difficulty and treatment outlined from this viewpoint gives quick results as a rule. The causes of fatigue are many, and usually multiple in the individual case. Physical exercise alone is rarely ever a cause. The same may be said of excessive study. But if we add to these two, in normal amounts, the complex social life of the modern American child, a combination results which is as important and as dangerous to the normal development of the child as many of the common, well recognized defects.

The question of fatigue and faulty posture are interrelated in that they form a vicious circle. Fatigue results in poor posture and poor posture results in fatigue. But the nutrition of a child must be a fundamental consideration in the correction of malnutrition with chronic fatigue and bad posture.

Dr. Holt has recently pointed out that the total daily caloric requirements of children of both sexes during adolescence exceeds by nearly a 1,000 calories the requirements of the adult man or woman of moderate activity. The undernourished child is like one convalescing from a severe illness, requiring twice or even three times as much food as is needed when he is in a normal condition.

A nutrition class was conducted by the nurses alone during the summer at the state clinic. They tried to get a class of twenty-five, by sending letters to 33 children who were seven per cent or more underweight. They succeeded in having a class averaging 10 each class day, with a total enrollment of twenty. There were twelve class days during the summer and 123 visits were made by the children. The nurses made out the charts giving the percentage of underweight and instruction was given in the routine to be followed, i. e.:

Diet—Two lunches and three nutritious meals a day.

Rest—Two rest periods, lying flat in bed with open windows and a small pillow under the shoulders. No strenuous games allowed.

At each class the children brought two days' record of food and activities. The nurses discussed these records in class, corrected mistakes and praised successful children.

To secure attendance during the summer, special lunches and entertainments were given to attract the children. The classes were conducted according to the Emerson method, with the exception that the nurses did not count the calories.

Dr. E. L. Meyers (Wilkes-Barre): It occasionally so happens, unfortunately, that we have to get away from home to learn just what our neighbors are doing. Both Dr. Wyckoff and Dr. Miner are from my town, and we all live within a square of each other. I know that Dr. Wyckoff has been interested in this particular subject for some time, but to work out this problem from a scientific basis requires infinite patience and much time. That Dr. Wyckoff has spent a great deal of time on this subject is indicated by her paper here to-day.

I believe this subject can be handled best in segregated groups in institutions. It may be news to Dr. Wyckoff and Dr. Miner to learn that the school district of the city of Wilkes-Barre is at the present time erecting a school building which will have about sixty rooms. In this building provisions are made for the care and education of all sorts of abnormal children—classes for undernourished children, mentally defective, pretubercular and children handicapped in other ways. I feel that Dr. Wyckoff will be a wonderful asset to our community in the future. Very little has been done, up to the present, to benefit this class of cases.

I have been extremely interested in Dr. Wyckoff's paper and I wish to voice my appreciation for the splendid manner in which she presented the results of her work.

Dr. Samuel McC. Hamill (Philadelphia): I have been very much interested in Dr. Wyckoff's paper. Dr. Wyckoff made it very clear that she is well equipped to conduct a nutrition class. I regret that she was not able to tell us her whole story because everyone here would have gleaned some valuable information—information which would have thrown light upon problems that perplex us in the care of children. There was one point she brought out that was illuminating. One of her charts showed a failure to gain through many weeks. Most thorough study did not reveal the cause of this failure. The mother was coöperative. The child's home discipline and environment were excellent. Its food was good and it got sufficient rest. Finally Dr. Wyckoff personally followed this child to her school and there found her housed in a superheated class room. The removal of the child from that room resulted in an immediate rapid gain in weight.

There are many people conducting nutrition classes, but there are very few people who are conducting them with such close supervision that they follow them into all the details of their lives and eliminate one possible cause of malnutrition after another until they have finally come down to the one which is responsible for the condition they are trying to relieve. There is a very striking lesson here for nutrition workers, and indeed, a lesson for each of us. How many physicians, when they confront such a problem in nutrition, make as detailed a study of the child's life as this? In truth, the most of us do not appreciate its importance. And yet, if we are to render the kind of service that we should, it is imperative that we not only know but apply our knowledge.

Dr. Richard Smith of Boston, who is in charge of the health of the children in Mr. Rivers' Country Day School, has evolved a chart which covers the child's life through the 24-hour-period, recording the hours of study, exercise, rest and sleep. With this evidence before him, he can quickly pick up the faults of the child's life, and by correcting them, build up the child's nutrition, if he is undernourished, and not infrequently transform a child that is falling behind in his intellectual work to one of normal scholastic standing. He told me of a child who applied for admission to the school, who had been dropped from three successive schools because of inability to keep up in his class work. He was admitted to the school on the condition that the parents would coöperate with Dr. Smith to the extent he demanded in the general supervision of the child's day. By carefully studying the details of the child's life, he quickly discovered that his excessive activity was overtaxing his energy, resulting in a measure of fatigue which made mental concentration impossible. By cutting down his activities and increasing his hours of rest, the school was able a few years later to graduate that boy as one of the honor boys of his class.

These things are of the utmost value to each one of us, because we meet these problems every day; and because we fail to give heed to the relationship of social environment to ill health, we frequently fail to make diagnoses which should be utterly simple.

Dr. William N. Bradley (Philadelphia): I cannot let this opportunity go by without saying a word in reference to the importance of nutrition clinics for preschool age children. I believe that here is the place to begin your nutrition work. While this is not a new thought, it is comparatively new in Philadelphia and other communities.

We recently started such a class at the Starr Center, about May or June, and we have learned considerable about undernourished children since that time. Dr. Wyckoff is to be commended for the methods which she has demonstrated here. She has spent most of her time in telling us of the results of her work; but her demonstration shows what is necessary for the successful conduct of these classes. Undernourishment and malnutrition are much wider than is generally supposed. It is only when one starts to investigate that one becomes aware of this. In our work at Starr Center we have discovered that most of our cases are not 7 per cent undernourished, but that they more nearly approach 15, 20 or 30 per cent under the average weight. You can see the task that is before us and my purpose in speaking is to call attention to the importance of the work for the preschool age child. This is not as easy as among school children, as can be readily seen, but it is surprising how quickly the children become interested, and how competition and the granting of reward stars, which are seen on the charts, is helpful in holding the interest of both the parents and children.

Dr. John D. Donnelly (Philadelphia): I want to congratulate Dr. Wyckoff on her splendid work. I would suggest that you all look at the Exhibit No. 1. on the other side of the main elevator, of the Philadelphia Interstate Dairy Council, which shows the work done the past year. The work is not taken from any one clinic, but is picked up from the various clinics all over the city, with very interesting illustrations.

Dr. Wyckoff (in closing): I have been much interested in all of your discussion and appreciate it. The suggestion of nutrition clinics for children of preschool age is most appropriate. It is indeed the ideal to have all children made ready physically for school, before entering at six years of age. If, however, this has not been done, the next best thing and the desperately needed thing to do is to make them physically fit now, before they leave school.

In conclusion I wish again to emphasize the fact that many underweight children are thought to be well by their mothers, and even by family physicians; but it is recognized now that, in order to grow up into healthy adult life, it is essential that their defects be corrected and their weight brought up to normal in childhood.

ACUTE ARTICULAR RHEUMATISM*

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Importance: This disease occurs in practically all parts of the world. It is more prevalent, however, in the temperate and sub-tropical zones.

While distressing in its acute symptoms and in the character of its sequellae, the low mortality during the early stages has caused the physicians to disregard its importance as a public health problem. By analysis of vital statistics, including only those under forty years of age who are reported to have died from acute articular rheumatism, acute endocarditis, or acute pericarditis, it was found that the combined death rate for 1916 in the registration area of the United States was 6.7 per 100,000. As the death rate in all cases of the disease is about 4 per cent, the application of this rate to the entire population of the United States is between 150,000 to 175,000 cases in 1916. While only approximately exact, these figures give some idea of the great importance of the disease. When we consider that by far the majority of the victims of this affliction are in the ages of childhood and young adult life, and that the cardiac sequellae cripple for years before the patient finally succumbs, the seriousness of the disease is more forcibly emphasized.

The early diagnosis therefore, of acute articular rheumatism is most important. Particularly is this true in the child, for without an early and positive recognition of its existence, incalculable damage may result. The main object of a diagnosis in the early stage is the institution of the proper treatment for the prevention of cardiovascular changes. In no other disease are cardiac complications more prevalent and more injurious. Many cases of mild acute articular rheumatism, so called "growing pains of childhood," are only recognized after a cardiac murmur has been detected. Too often, when examining a child, we find a mitral stenosis that has persisted for years, unrecognized. If we ask the mother whether the child has ever had acute articular rheumatism she answers "No, but she had growing pains when quite young." Even when examining applicants for insurance we find a chronic endocarditis, of rheumatic origin, unrecognized before. If these cases had been thoroughly examined and the proper treatment instituted, the cardiac complication might have been prevented. The functional capacity of the heart should be tested in all cases of suspected rheumatism.

Definition: Acute articular rheumatism is an infectious disease. This is shown by its clinical and anatomical characteristics. An organism first described by Wassermann in Germany, and Triboulet in France, has been claimed by Poynton and Paine and Ainslee Walker in England to be definitely demonstrated as the causative agent of the disease. They isolated the organism from the blood itself and from the blood in the heart and from exudates in the pericardium as well as effusions in the joints, and from rheumatic nodules in the skin, and after cultivation, injected them into rabbits, producing multiple arthritis, endocarditis, and acute pericarditis, similar to those characteristic only of acute articular rheumatism. The infection is characterized by an inflammation which localizes in the joints, and travels from joint to joint evidently through the circulation. The most frequent complication is endocarditis.

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Etiology: Acute articular rheumatism prevails in temperate and humid climates. It is more common in the cool, damp months of the year. Exposure to cold and dampness predispose. Living in damp dwellings with poor ventilation is conducive. Yet during the World War the soldiers were exposed to all forms of unfavorable climatic conditions, yet it was remarked by many medical officers of both the American and British armies that true rheumatic fever was comparatively rare. One attack predisposes to others. The influence of age upon the frequency of the disease is notable. It is met with most frequently in young adults, mostly between 15 and 35. In younger patients the arthritic symptoms may be mild and yet make a more serious attack upon the heart.

Other causes have been suggested: such as defective assimilation, which produces lactic acid or combinations of it; faulty metabolism, so that nitrogenous products, instead of being converted into urea, are transformed into uric acid and other irritant substances which produce these symptoms. The tonsils are frequently looked upon as the seat of entrance of the disease. Acute tonsilitis is frequently followed by acute arthritis. Pyorrhoea alveolaris not infrequently is an etiological factor. Influenza, pneumonia, scarlet fever and other infectious diseases at times seem to play a part in depressing the resistance of certain individuals to acute articular rheumatism.

Sex: If all ages are taken, males are more frequently affected. Up to the age of twenty, females predominate. Between the ages of ten and fifteen, girls are more prone to the disease.

Heredity: It seems that in a great many cases heredity plays an important part. Holt says that fully two-thirds of the cases that have come under his care have a rheumatic family history.

Symptoms: The picture of a migratory arthritis responding to the salicylates does not portray the disease in all its forms. The symptoms may be divided into those that are the general manifestations of the infection and those intimately connected with the specific disease. In the latter are several groups: arthritis, subcutaneous nodules, pleurisy, endocarditis, pericarditis, myocarditis, and nervous symptoms, which include chiefly chorea. In adults the migratory arthritis with a fairly frequent complicating carditis predominates; while in children the visceral, nervous and subcutaneous manifestations are most frequently seen. The arthritis may be entirely absent or so slight as to be missed. In the second decade of life there is a gradual transition of the picture seen in childhood to that of the adult. In an adult the arthritis and visceral complications are sudden, while in childhood they are more gradual.

The infection in children leads more frequently to cardiac sequellae. With each decade of life there is less liability for the heart to be permanently damaged. Prodromes are not common. When they are present they consist of sore throat, slight pains in the joints and malaise. Acute tonsilitis may usher in an attack. The onset is usually abrupt with chilliness, fever, pain in joints, coated tongue, thirst and loss of appetite. One or more joints are swollen, reddened and painful. The pulse is full, frequent and soft. The urine is scant and highly colored. There is a profuse, acid, ill-smelling perspiration. The joints are involved successfully but without any regular order. The larger joints are mostly involved, the smaller ones of the hands and feet less so. The ankles and wrists are often enlarged, tender and very painful. As one joint is attacked the inflammation subsides in another previously involved. It is characteristic to jump from one joint to another. Pain is a constant and conspicuous symptom. It is usually agonizing and is made worse by pressure or movement. Prostration, inability to sleep and helplessness add to the patient's misery. The temperature is irregular, with marked remission and exacerbations. Profuse sweating occurs. Defervescence is by lysis. Recrudescences are common and relapse frequent. Marked anemia develops rapidly. A leukocytosis of moderate degree is present. Febrile albuminuria is common. The saliva is usually acid. There are some cases with very mild symptoms. In children particularly the symptoms may be very mild. Some cases have so little pain as to be called "growing pains." The attack does not confer immunity, but on the contrary predisposes to future attacks.

Complications: The condition of the heart in acute articular rheumatism is most important. The physician should in every case, even the mildest, maintain a continuous watch over the heart. Carditis not infrequently accompanies acute articular rheumatism. This may develop any time during the course of the disease. It is often unattended by any subjective symptoms, so that it can be recognized only by careful repeated physical examination of the heart. In children particularly, cardiac manifestations occur where the articular symptoms are very mild, and in some cases where they are entirely absent.

Acute endocarditis is much more often seen in children than in adults, and probably occurs in the majority of all severe cases. The heart is so frequently affected in the arthritis of childhood that it should be closely watched whenever articular symptoms are present, no matter how mild. In many cases the onset of cardiac diseases is attended by a fresh exacerbation of fever, palpitation or painful sensations in the praecordia, or by dyspnea.

Cardiac complications during acute articular rheumatism are the means by which fatal results are produced. They are found in the pericardium, myocardium or endocardium. The most frequent is endocarditis of the heart valves. The valve most frequently affected is the mitral. Mitral stenosis is mostly of rheumatic origin. Often we see patients with mitral cardiac lesions who have presented such mild articular symptoms, that the presence of arthritis was overlooked, and "growing pains" was ascribed as the cause of painful joints. Endocarditis, the most frequent and serious complication, occurs in a considerable percentage of all cases. The liability of endocarditis diminishes as age advances.

Pericarditis may occur independently or together with endocarditis. It is less frequent than endocarditis and rarely occurs before the seventh year. It may be simple fibrinous, serofibrinous or, in children, prulent. Clinically it is more frequently found in this disease than in any other acute infection. Myocarditis occurs frequently and especially in connection with endopericardial changes. This leads to weakening of the walls and dilatation.

Tonsillitis: The association of tonsillitis with acute articular rheumatism is very close. Patients who are subject to frequent attacks of tonsillitis should be regarded as possibly rheumatic, and closely watched for that disease. Acute tonsillitis frequently ushers in an attack of acute articular rheumatism and occasionally acute endocarditis without arthritis.

Chorea: Chorea is often the manifestation of a rheumatic diathesis, to be followed sooner or later by articular symptoms or by endocarditis. Sometimes all three occur together. Any one being present, the others should always be looked for. Pneumonia and pleurisy occur in about 10 per cent of the cases, they frequently accompany the cases of endopericarditis. Bronchitis and asthma, with or without a history of rheumatism, frequently are of rheumatic diathesis. Meningitis or peritonitis may complicate rheumatism. Nervous complications are mostly due to the hyperpyrexia and in part to the special action of the toxins of the disease. Delirium sometimes follows a large dose of salicylates.

Cerebral rheumatism, a most fatal form, is rare. It begins mildly or severely. After a few days of the ordinary course the temperature rises rapidly to 105° or higher, with a subsidence of the inflammation of the joints. If sweating ceases, the tongue becomes dry and brown, the pulse rapid and feeble, and breathing rapid. Patient becomes restless and sleepless, muscular twitchings develop, followed by general convulsions, delirium, coma and death.

Cutaneous Affections: Sweat vesicles are common. A red miliary rash may develop. Purpura, with or without urticaria, may occur.

Rheumatic Nodules: These occur in the form of small subcutaneous nodules attached to the tendons and fascia. They vary in size from a small shot to a large pea and are most numerous on the fingers, hands and wrists. More common in children than in adults, they occur in cases with marked cardiac involvement.

Diagnosis: The diagnosis of acute articular rheumatism in the adult is not difficult. An acute migratory polyarthritis, without evidence of structural changes in or about the joints, and respondng to salicylates is rather diagnostic. In the young the condition is different and the physician should be constantly on the alert for cardiac complications and subcutaneous nodules. Low grade fever and chronicity are present.

Acute articular rheumatism must be differentiated from septic arthritis, gonorrheal arthritis, rheumatoid arthritis, gout, pneumococcal arthritis, typhoid arthritis, scarlatinal arthritis and acute secondary arthritis.

ACUTE RHEUMATIC FEVER:

1. History previous attacks, evidence of joints, also mitral disease. 2. Onset is acute. 3. Affects chiefly larger joints, small joints exceptional. 4. Moves from joint to joint. 5. Pain very severe, and moves from joint to joint. 6. Swelling only slight or moderate. 7. Effusion moderate, never suppurates. 8. In several days to two weeks joint is normal. 9. Permanent distortion or stiffness exceptional. 10. Drenching, acid-smelling sweats; formation of minute vesicles. 11. Relieved by salicylates. 12. Not much arthritic muscular atrophy.

Septic Arthritis:

1. Often mistaken for rheumatic fever. 2. Usually involves one joint, but several may be involved. 3. Does not flit from joint to joint. 4. Soft tissues often brawny and thickened. 5. Color usually dusky instead of bright red. 6. Suppuration often; never in rheumatic fever. 7. Joint often becomes fixed. 8. Foci of infection, as in teeth, vagina, uterus, boils or sinuses. 9. Irregular temperature, hectic in nature. 10. Leucocytosis.

Gonorrheal Arthritis:

1. Varies in degree of acuteness; (a) In acute gonorrhea, symptoms acute; (b) In gleet, usually chronic. 2. Limited to one joint, most often knee, but may involve wrist, hands, or fingers. 3. Often much swelling of soft tissues; effusion scant. 4. Usually very painful. 5. Sheaths of tendons often involved. 6. Muscular atrophy marked. 7. Suppuration rare. 8. Fibrous ankylosis in some cases. 9. Salicylates have no decided effect. 10. Diagnosis strengthened by finding foci of gonococci.

Rheumatoid Arthritis:

1. First attack is often acute. 2. Name is bad; resembles acute rheumatic fever. 3. Fever ranges from 99°-100°, from onset; lasts 3 to 6 weeks. 4. Pulse rapid, hands and feet sweat. 5. Patches of freckle pigment appear on body. 6. Fever less severe and last longer than in rheumatic fever. 7. Most patients are young women. 8. Joints spindle shaped; first and second phalangeal most often involved. 9. As disease progresses many joints involved; frequently temporomaxillary. 10. Joints never suppurate. 11. No endocardial involvement. 12. Muscular atrophy often extreme. 13. In a few months second attack occurs, though not so severe. 14. Often confused with osteo-arthritis, but occurs in younger subject. 15. No bony outgrowth in rheumatoid, arthritis as rule. 16. Heberden's nodes not seen in rheumatoid arthritis. 17. X-ray shows bony outgrowths in osteo-arthritis.

Gout:

1. Detection of deposits of urate of sodium. 2. History of repeated characteristic attacks. 3. Often heriditary. 4. Rarely seen before age of 20 years. 5. Characteristic joint, ball of great toe, often right. 6. Attack usually begins at night, subsides toward morning. 7. Joint becomes swollen and tense, with some fever. 8. Attacks follow on successive nights, gradually diminishing. 9. May have many attacks throughout life. 10. Other joints may become involved. 11. Gouty joints rarely suppurate. 12. Often have pain in tendon sheaths and back of feet. 13. Often chronic arthritis said to be gout when it is osteo-arthritis. 14. Bony outgrowths in gout, but not as large as in osteo-arthritis. 15. X-ray shows urate of sodium as light spots in or near joint.

Pneumococcal Arthritis:

1. Rare in adults, usually follows pneumonia. 2. One joint involved, usually knee; less often shoulder or elbow. 3. Often follows trauma. 4. Onset, sudden pain, rapid swelling, pus formation. 5. Common in children under five years. 6. Temperature raised, child looks ill. 7. Immediate incision and drainage necessary. 8. Often arises from pneumococcal middle ear disease.

Typhoid Arthritis:

1. Two kinds: (a) Precedes disease; multiple; not severe; subsides at onset of disease itself. (b) Occurs during disease; one or many joints; varies in severity; may require incision and drainage. 2. Sometimes joints of spine affected. 3. Hip may become stiff, with osteitis of head of femur.

Scarlatinal Arthritis:

1. Affects many joints. 2. Not severe, soon subsides. 3. Diagnosed by presence of scarlet fever.

Acute Secondary Arthritis:

1. Due to spread of disease from neighboring bones. 2. Limited to one joint; in infants may involve several joints. 3. Most dangerous form to differentiate from osteomyelitis. 4. Onset sudden; temperature high. 5. May be fatal unless opened and drained. 6. X-ray should be used as aid in diagnosis.

Prevention: In childhood the joint involvement is often very slight and often overlooked, or attributed to so-called "growing pains." The presence of such symptoms is sufficient to have the child put to bed.

We believe that heredity has a marked influence in the causation of acute articular rheumatism. Every child with a family history of rheumatism should have his throat examined for diseased tonsils and if such exist they should be removed. The teeth and gums should be watched and treated as indicated.

Treatment: In the treatment of this disease three conditions must be kept in mind: the symptoms of general intoxication, the arthritis and the carditis.

The patient must be put to bed at once, no matter how mild the symptoms. The bed garments and sheets should be of flannel or wool. As the course of the disease is usually long, the question of nutrition becomes one of importance. Full caloric feedings, frequently given, are advisable, as well as large quantities of fluids to promote the elimination of waste products and to replace the water lost by sweating.

Much comfort can be afforded the patient by the proper arrangement of pillows, the lifting of the covers from painful joints by means of cradles, the immobilization of painful joints, the encasing of joints in cotton.

The chief means of reducing the temperature and relieving the pain is by the proper administration of the salicylates. These should be given in large doses with double the amount of sodium bicarbonate. They should be given with sufficient water. Gratifying results are obtained by giving fifteen to twenty grains of sodium salicylate with thirty to forty grains of sodium bicarbonate every one, two or three hours until the first signs of toxicity appear. The drug should then be discontinued for twenty-four hours, when it should be resumed with half the toxic dose. This mode of administration demands the utmost care of the physician and nurse. If the stomach becomes intolerant to the salicylates, novaspirin is frequently substituted with favorable results.

The use of antistreptococcus serum has not been attended with satisfactory results in most cases. Complications are treated symptomatically.

Tonsillectomy following an attack of acute articular rheumatism, provided we are satisfied the tonsils are the seat of the infection, is most commendable. It were better, however, that this condition had been discovered before the arthritis and the tonsillectomy, done to prevent the possible occurrence of arthritis with its complications. Prophylactic treatment of arthritis is of most importance.

DISCUSSION

Dr. George E. Holtzapple (York): The author of the paper has given us a splendid *résumé* of the subject of acute articular rheumatism. This subject is timely, for it refers to a condition which we meet very frequently and concerning which there are still some mistakes made in diagnosis, greatly to the disadvantage of the patient. This paper serves to refresh our memories on the clinical features, which are so distinctively characteristic of acute articular rheumatism, that if we take this knowledge to the bedside, we may usually make a correct differential diagnosis, and if we fail to do this, it may result in the needless death of a patient every now and then.

Suppose we make a diagnosis of acute articular rheumatism. When the case is one of acute septic or suppurative arthritis or acute osteomyelitis involving a joint, and the case is treated as one of acute articular rheumatism, what result could we expect? Almost certain death. It is dangerous to make the diagnosis of acute articular rheumatism in an infant or in a child prior to the age of five years, because a typical attack of acute rheumatic arthritis does not often occur at that age. What we have to fear at that age is rather the complications or other rheumatic manifestations. There is great danger, at that time, of overlooking a case of septic arthritis or scurvy, or a case of osteomyelitis involving a joint. When we are called to a case of acute articular rheumatism we should always keep in mind the various complications or rather the rheumatic manifestations, which are all probably due to a common cause, and believed by many physicians to be due to a special strain of streptococcus. I am well aware that not all authorities subscribe to this explanation. I feel that Dr. Rosenow of Rochester, Minn., has done a really wonderful work in his efforts to show an etiologic relationship between a certain strain of streptococcus, grown by special cultural methods, and acute rheumatic arthritis as well as many of the complications or rheumatic manifestations.

Since I read of his work I have made it a point to urge patients to procure prompt and efficient treatment in cases of acute tonsillitis as well as in cases of acute pharyngitis and not to neglect treatment in any cases of acute infections of the head, which are so common, for fear they may be due to a streptococcus infection which will result in a serious rheumatic manifestation. I have seen a slight angina followed by a very severe acute rheumatic arthritis or some other severe acute rheumatic manifestation. Hence the propriety of looking upon even trivial acute infections of the head as a possible source of danger. In every case of acute rheumatic arthritis we should keep in mind the common complications such as endocarditis, pericarditis, myocarditis, pleurisy, chorea and subcutaneous nodules in children, erythema nodosum, erythema multiforme and peliosis rheumatica as well as some other visceral complications in the adult.

In every one of these rheumatic manifestations we should make a careful, systematic physical examination of the individual from head to foot, looking not only for diseased tonsils and acute pharyngitis, but noting also if there exists disease of the teeth and gums, nose and upper pharynx, middle ears, nasal accessory sinuses, disease of the lungs, chronic bronchitis, bronchiectasis, infection of the gall bladder and bile ducts, ulcer of stomach or intestinal tract, chronic appendicitis, prostatitis, vesiculitis, deep urethritis, cystitis, pyelitis, salpingitis, endometritis and metritis, and examine also the skin surface for infections, any one of which may be a primary focus of infection and in etiologic relationship with an arthritis. If a focus is found it should be eliminated.

We cannot always be certain that the supposed primary focus is the cause of the rheumatic manifestation, but from the amelioration that often follows, the removal of such focus is always advisable if possible. These conditions, however, pertain much more frequently to another form of arthritis, often mistaken for acute inflammatory rheumatism, known as acute rheumatoid arthritis. It is often difficult to distinguish between acute rheumatoid arthritis and acute articular rheumatism. However, if you take the symptoms given by the author in the paper and apply them carefully, you can usually differentiate the one condition from the other without any difficulty.

After an acute rheumatic arthritis has once set in, the patient ought to be kept very quiet, especially if it occurs in a child. Rest in bed lessens cardiac strain and the liability to cardiac complications. Acute articular rheumatism usually affects first the large joints, or those that are subjected to the greatest strain. The smaller joints, which are subjected to less strain, are affected later. Rheumatoid arthritis usually affects first the small joints of the hands or feet, but not always. I have seen cases in which the large joints were involved at the beginning, so that it made the diagnosis somewhat difficult.

When a case of rheumatism is before us, we ought to watch the heart carefully, and examine it systematically and every day, to note the time of onset of cardiac complications so as to institute treatment early and prevent unnecessary damage. The nurse should be instructed to report any symptom or sign pointing to a cardiac complication; and usually there are some such symptoms or signs. We should take into consideration the fact that in at least from two to four per cent of those affected with acute articular or inflammatory rheumatism, death occurs during the primary infection.

Dr. John A. Lichty (Pittsburgh): There is one point that I should like to make in the discussion of this paper. I think that Dr. Penrod has covered the subject well from the ordinary standpoint of arthritic disease, and has given us the etiology as it has been presented to us for a long time; and yet, there is a question in my mind whether it would not be better to make a little closer differentiation as to what he really means by acute rheumatic fever. The terms, acute rheumatic fever and acute arthritis, may mean entirely different things, so that I think there is really room for a difference of opinion as to whether we are dealing with the same disease, when we mention these two conditions. This could easily have been settled by bacteriological investigation, and I believe the opinion exists that Poynton and Payne have decided that question, and we are able to differentiate between the two conditions. Recently, in hearing the discussion on this same subject in which the work of these authors was reviewed, it looked to me as though Poynton had not proved his case. In fact, I do not believe that the English accept his conclusions at all now. So far as I know, we have not, in our laboratory, been able to isolate this microörganism; and I believe that until we are able to do so, we shall not be able to differentiate between the real old-fashioned acute rheumatic fever and these acute infectious arthritides. I simply throw this out as a matter for discussion, and do not mean to say that Dr. Penrod's discussion of the subject is not to the point, but I still think that we may have to differentiate between these two conditions before we can speak very definitely of the treatment.

Another point that I wish to mention is in a therapeutic way; and I wish merely to refer to it. I do not know that I can say a thing more than what I have read; but from what limited experience I have had, I think that the salicylates are sometimes not successful in these cases of acute rheumatic fever. I believe that in these particular cases cinchophen is a very successful remedy—so-called atophan. I have seen this in the literature only recently, and I have had but two cases in which I thought that I could bear out these experiences. These were two cases in which we used salicylates to the limit, and for a long time, and in which the temperature went as high as usual and the pain and discomfort remained. We then changed over to cinchophen and had very satisfactory results. Of course, it may have been only a coincidence. Two cases do not make a very large series. They tell me that you cannot conclude anything from a series of cases less than five hundred, because the law of chance is so great. We used seven and one-half grains every three or four hours. I might say that in the literature we have been warned about the fact that possibly it is more irritating to the kidneys than the salicylates are. We cannot say anything regarding this, because we did not notice any particular change in the action of the kidneys or in the condition of the urine in those cases in which we have tried it. We have tried it in other cases, in which it did not seem to make any difference. Only in these two cases do we feel that cinchophen was successful, although we had failed with the salicylates.

Dr. Lawrence Litchfield (Pittsburgh): It is true, in fact, that it is impossible to define acute rheumatic fever or differentiate it, or to tell other people how to diagnosis it; but we all know pretty well what we mean by acute rheumatic fever; and, if we are careful, we think we know it when we meet it.

As to the diagnosis I think it is well to emphasize the fact which the writer of the paper mentioned and which Dr. Holtzapple hinted at, namely, that the diagnosis is apt to be premature. We are more apt to call the condition rheumatism when it is something else than we are to call it other things when it is rheumatism. I scarcely ever see a case of osteomyelitis that has not been allowed to go on and become unnecessarily grave under the belief that it was rheumatism.

There are two points that I wish to emphasize. One is the familial character of acute rheumatic fever—the fact that some families are much more subject to it than are others. If we meet in a child a case of joint pains followed by endocarditis and there are other children in the family, it is well immediately to caution the parents to be on their guard against the same things developing in the other children. If one child develops rheumatic endocarditis, the chances are strong that the other children in the family will develop the same thing. I have seen three children in such a family hopelessly crippled by this affection before they were twenty-three years old.

In an acute rheumatic affection, it often happens that the endocarditis develops before the arthritis; and if we have a child—or even an adult—with a sudden development of endocarditis without apparent cause, with a moderate degree of temperature and leukocytosis it is a pretty safe bet that within two or three days we are liable to have rheumatic symptoms. Massive doses of salicylates, at short intervals, day and night, may abort the attack or prevent serious damage.

As to the atophan, which Dr. Lichty spoke of, I remember well that at a meeting of the American Medical Association at Los Angeles, ten years ago, I described atophan and its uses, particularly in gouty cases. In the same paper I referred to diplosal, which is now marketed under the name of "Salisal." I have used both for the past 12 years. Salisal is supposed to contain more salicylic acid than salicylic acid itself, owing to the fact that it contains less water of crystalization. I have found it particularly well borne by stomachs which refuse the ordinary salicylates. In reporting my paper 12 years ago the editors of the Journal struck out the names of both of these drugs because they had not yet reached the Council on Pharmacy of the American Medical Association. Both preparations were subsequently approved by the Council, but both had been used in Europe for a considerable time when I reported them.

If a case is benefited by atophan rather than by a salicylic preparation, there is strong reason to consider whether or not we are dealing with a case of gout, rather than with rheumatic fever.

Dr. Irwin J. Moyer (Pittsburgh): I am much interested in this discussion of acute articular rheumatism, and there are a few points that I wish to emphasize.

We are still lacking in absolutely definite points of diagnosis of acute articular rheumatism, but the age is one factor; and the pain, as mentioned, is another prominent factor. The movement of the pain from one point to another is still another strong factor that helps us in the diagnosis. Of course, there is a multiplicity of arthritides that occur in persons beyond the age of thirty-five years, which are of an entirely different nature from that of acute articular rheumatism, as we understand it. I believe it is an acute infectious disease, and that in ninety per cent, and possibly more of the cases, the origin is in the throat; but I believe that we can find other causes. Sometimes the cases originate from the digestive tract. An acute gastric upset will sometimes precipitate an attack of acute arthritis, which is called an attack of acute articular rheumatism.

So much for the origin of it. Now for the complications. It is not always the most severe case that leaves complications. I have under observation at the present time a youngster, one year of age, with a bad mitral disease. The mother says that when three months old, the baby was sick for three days and seemed feverish. I believe that this attack was the origin of this child's endocarditis. We should be very careful in our observation of children, and young people also, when they have some acute disturbance that is inflammatory in type, with an increase in the pulse and a rise in temperature, without any definite symptoms. Sometimes they develop arthritis, and sometimes not. Those that do not develop arthritis are as apt to develop an endocarditis; and here is where we often find histories of valvular disease coming on without a definite history of acute articular rheumatism. So we should be very careful, in giving an opinion that it is a slight thing, to be overcome in a few days, because we do not know when acute endocarditis will occur. We do not get a valvular lesion until the condition has progressed far enough to produce such a disturbance, but I believe that an increased pulse-rate is indicative of a coming disturbance. I look with suspicion upon increase of the pulse-rate out of proportion to the degree of illness of the patient. This is apt to show the beginning of endocarditis.

Now, I wish to mention a few points regarding the treatment of these cases. I think that we should be careful to satisfy ourselves that the toxic element is eliminated before we allow the patient to be up and about.

I had a patient, a young woman, who several years ago had had an attack of rheumatism, and had endocarditis afterwards. She had very bad rheumatism and said she hoped she would get rid of it. She stayed in bed for three months after the temperature and everything had subsided except the signs of endocarditis. I saw her a year ago and could not find any cardiac murmur, and she had not had any rheumatism since. I believe that the prolonged rest in bed, until the patient thoroughly threw off the infection, lessened the probality of a permanent cardiac condition remaining. The most dreaded factor in acute rheumatic fever is endocarditis. I believe that when that disease occurs in children, and they are handled properly, the outlook is not so bad as we have heretofore thought. I had one case of arthritis followed by definite signs of cardiac lesions. This child was kept in bed for three months after all signs of arthritis had subsided. All evidence of cardiac disease (valvular lesions) has disappeared.

Dr. Albert S. Kaufman (New Kensington): I should like to stress a point mentioned by the last speaker. I had been taught that cardiac murmurs in endocarditis never disappear. I have under my observation, however, two cases in children in which this has happened, and I believe that the point mentioned by Dr. Moyer regarding rest for a long enough period is what brought this about.

Last December, a boy, nine years of age, who in June had had his tonsils and adenoids removed, was taken sick with an angina. I saw him and examined his heart, and could find no complication. He had no symptoms of rheumatism. Two days later, I detected an endocarditis, and a couple of days following that, he had the rheumatic symptoms. The boy was kept in bed for six weeks, and his parents became a little perplexed as to why he should be sick so long. I suggested a consultation. Dr. Theodore Elterich, of Pittsburgh, was called and verified the diagnosis and treatment. The boy was kept in bed for three months. In ten weeks I was unable to detect the cardiac murmur, but I kept him in bed for two or three weeks longer. Dr. Elterich saw the patient later and confirmed the condition. I lay this to the absolute rest. The boy was in bed when the cardiac murmur appeared. That was another condition that was favorable to its disappearance. The heart was not called on to compensate by hypertrophy, as it would have been if he had not been in bed.

I have a nephew, a young man now twenty years of age, who when twelve had an attack of rheumatism complicated with endocarditis. I kept him in bed twelve weeks and the murmur became inaudible some few months later. I did not expect the murmur that was present to disappear. He has been examined for life insurance and passed as a first-class risk. I have examined him several times since and am unable to detect a murmur. These are two cases in the treatment of which the effect of long enough rest has been exemplified.

Dr. Ralph Pemberton (Philadelphia): I have been very much interested in what the several speakers have said about arthritis, and I think that we must all be in accord with Dr. Moyer in his differentiation of disease in persons under twenty from that which we see in the later decades of life. I cannot, however, resist calling attention to what I believe is a growing view regarding rheumatic conditions at large, to which I am leaning more and more. That is, that chronic and acute arthritis are essentially the same disease, although clinically their respective syndromes differ. One patient, for example, may have hyperpyrexia, leucocytosis, valvular involvement, emboli and septicemia, and the other may have no leucocytosis and no fever at all; but fundamentally, the phenomena of hyperemia, effusion and the erosion of cartilage and bone have a common pathologic basis in both types of the disease. One is surprised to find how very frequently certain disturbances which reflect part of the pathology back of chronic arthritis, such as a lowered sugar tolerance and changes in the blood gas ratios, may occur in both types.

Dr. J. Newton Hunsberger (Norristown): I was pleased to hear Dr. Litchfield call this condition acute rheumatic fever. I think that it would be easier to make a correct diagnosis, if we would always call it that, with or without acute articular complications.

I should like to say something about the treatment. I feel very warmly upon that subject. Of course, according to most authorities, anyone who does not use salicylates in acute rheumatic fever is not doing the best he can for his patient, but I should like to have anyone here give me a real reason why he uses salicylic acid, and what good it does. About thirty years ago, when I was a student and practiced with my preceptor, I was taught to use it in very large doses. I saw some rather unfortunate complications, which I attributed to the use of salicylates, and I have not used them since. My results have been much more satisfactory since I have stopped prescribing them, and I do not have the cardiac complications that so many of you have spoken of to-day.

A Member: I want to say a word about the classification of Llewellyn and Jones, of Edinburgh, on fibrositis. They divide the cases into those in children and in young people up to thirty-five, and those in adults over forty years of age. In the former, the condition is usually rheumatic fever; while in the latter, it is commonly a metabolic disorder, mostly gout. That is what most people call rheumatism after the age of forty. With a gouty rheumatism, they divide the fibrositis into traumatic, infectious and metabolic.

Dr. William N. Johnson (Philadelphia): The thought also passed through my mind—"Why do we use salicylates?" We had been taught to do it, and Dr. Hunsberger said that he had not used them since his past unfortunate experience. I should like to ask Dr. Penrod what his idea is as to the use of the salicylates for acute rheumatic fever, acute articular rheumatism, or acute rheumatoid arthritis. I have never discovered the reason why we use salicylates in these conditions—whether on account of their antiseptic action, or on account of their being febrifuges, or because of their being antacids. I was interested in what Dr. Hunsberger said about not using them, and should like to know what he does use in these cases.

Dr. F. R. Clark (Berwick): There are a couple of points that I want to bring out: In many cases of rheumatism or rheumatic fever attributed to tonsillitis as the causative factor, I incline to believe the tonsillitis is merely the first local manifestation of the rheumatic attack.

As regards treatment, the remedy that has given me the best results, and one that I have used for many years, is colchicin. I dissolve one grain of colchicin in an ounce of dilute alcohol. The initial dose for adults is three drops every two hours, increasing the dose one drop each day, until the physiological effect of the drug is produced. If ten drops produce the physiological effect, then the dose for that patient is five drops. In the treatment of rheumatic endocarditis, colchicin has given me far better results than any other remedy. But, while it is an admirable remedy, still I do not consider it a specific. Occasionally, other remedies will bring about better results.

Dr. Penrod (in closing): I thought, when I selected this subject for my paper, that it would have been better to have a symposium rather than a ten minute paper. So there is very little in it on the treatment.

I remember that in Atlantic City, when the American Medical Association had their meeting there, Dr. Chase was the first who spoke of atophan. The remarks, I did not think were complimentary to Dr. Chase. Most of the men went back to the old treatment of sodium salicylate with sodium bicarbonate.

In regard to the differentiation between acute rheumatic fever and acute articular rheumatism, the majority of authorities consider them the same and give the two as synonyms. Poynton and Payne and later Rosenau, in our day, have isolated a streptococcus that they think is the cause of the disease. They performed experiments, and produced in rabbits conditions analogous to acute articular rheumatism.

In reply to Dr. Lichty, I would say that I think that if we should make a premature diagnosis, it would be better to make it as acute articular rheumatism and put the patient to bed. If a physician is careful, he will never make a wrong diagnosis of osteomyelitis. This usually affects one bone, and may be close to the joint, but you will not have the fleeting character of pain that you have in acute articular rheumatism and you will have local tenderness more definite and marked. The symptoms are quite different.

Endocarditis without arthritis is possible, but you may have the arthritis and not detect it. I believe you cannot definitely say that if you have endocarditis, you have it without arthritis, although I may be wrong. There may be an endocarditis that is not rheumatic. Cases with an aortic lesion are mostly syphilitic, and a differentiation is made between the rheumatic and the syphilitic condition. I have this all written out in the paper, but did not have a chance to read it.

I think that the question of assimilation, elimination and metabolism will cover the point raised by Dr. Moyer.

In reply to Dr. Kaufman, I would state that I think cardiac murmurs will sometimes disappear. Dr. Cabot says that the murmurs you get in endocarditis, at the mitral area, systolic in time (mitral regurgitation without stenosis) are not the result of an organic lesion, and these disappear. This is probably due to dilatation; and if the patient is put to bed, the case clears up and the murmur disappears. We have all seen this in mitral systolic murmurs, rather than organic.

Replying to Dr. Pemberton's remarks concerning acute and chronic articular rheumatism, I would say that the paper was on acute articular rheumatism. I did not take up the chronic form. These cases are acute arthritis. This may have been gout. This question is taken up in the discussion on the differential diagnosis.

The question of metabolism is taken up in the part of the paper devoted to that subject.

SELECTIONS

COMMON TYPES OF GOITER*

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In a discussion of the types of goiter commonly met with, we find that the clinical classification, i. e., the broad division of goiter into the simple or nontoxic and the toxic types, is the most practical for our purpose.

SIMPLE OR NONTOXIC GOITER

Omitting the uncommon varieties of goiter (tuberculous, syphilitic, and the rarer thyroid enlargements) and confining ourselves to the every day type of thyroid growth, we might define a simple or nontoxic goiter as a thyroid enlargement unaccompanied by thyroid hyperactivity.

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* Read at a meeting of the Philadelphia County Medical Society, October 12, 1921.

No physician can escape noticing the picture of the developing youngster, usually a girl during puberty, with a thyroid swollen to varying degree—from an almost imperceptible hypertrophy of the organ to definite goiter formation. The growth is usually symmetrical, unattended by constitutional disturbances as a rule, other than those phenomena physiologically accompanying the development of the adult. Puberty, pregnancy, lactation, and even the menopause, give rise to emergency demands upon the thyroid with resulting tendency toward swelling of the organ. Occasionally one might discern evidences of thyroid hypersecretion for a brief while, and indeed, a small percentage of cases develop Graves's disease, but this is the exception. As a rule, the emergency demand for thyroid secretion having ceased, the gland in the majority of instances returns to its normal size. In such an event, if the swelling be slight or moderate, it should not be regarded as goiter but merely as a state of temporary physiological adaptation to certain changes occurring elsewhere in the body. However, the swelling often persists. The causes are frequently discovered to be focal infections in tonsils, teeth, nasal sinuses, gastro-intestinal, or genito-urinary tract, acute infectious disease, and geographical conditions. At times, and here heredity plays a part, the cause is not discoverable and the goiter is dubbed "idiopathic." Perhaps the so-called "morbid habit of tissue cells" may be offered as an excuse for the existence of some of these cases. However that may be, a definite goiter develops, assuming varying size and shape, disfiguring the individual, and at times causing compression of important structures, resulting in a compromise of the patient's comfort and health, and often endangering life itself.

Pressure symptoms may be mild, resulting in recurrent attacks of laryngeal cough, dysphonia, dysphagia, occasional headache, epistaxis, or tinnitus aurum. When a goiter dips down partially or completely into the thorax (intrathoracic goiter) compressing the nerves, blood vessels, and trachea, there is serious impediment to circulation and respiration. These phenomena give rise to the so-called *mechanical goiter heart*, so well described by Kocher,[1] Rose, Kraus, and others, and may lead to sudden death from asphyxia.

Occasionally (and fortunately in a small percentage of cases), especially in the presence of an hereditary tendency, a goiter, formerly harmless and innocent for many years, will suddenly become tense, indurated, and painful, somewhat larger than usual, the skin cyanosed and adherent, and we have a case of malignant disease of the thyroid.

Nontoxic hypertrophy of thyroid in youth of 12. (Courtesy of Dr. S. Weiss of New York.)

Nontoxic hypertrophy of thyroid of two years' duration in a girl of 16. (Courtesy of Dr. S. L. Rubinsohn, Philadelphia.)

In simple or nontoxic goiter, we do not exclude a state of thyroid hypo-activity. Thus, some years after the onset of thyroid swelling, the patient begins to increase in weight, becomes progressively more sluggish in physical and mental activity, the skin becomes dry, the hair brittle, and all the signs of partial or complete myxedema supervene.

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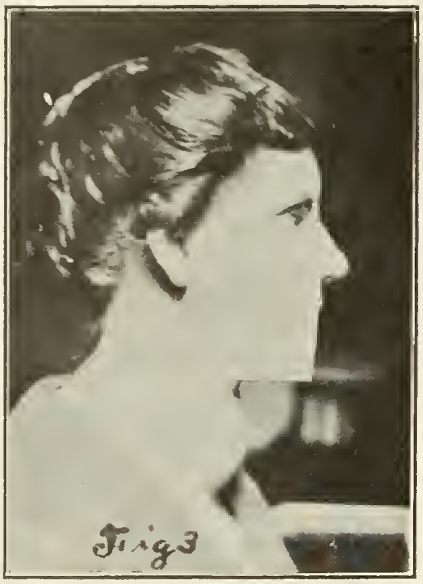
[1] Crotti, André: Thyroid and Thymus—Lea and Febiger, Philadelphia, Pa., 1918.

More often, however, superimposed upon a simple goiter of long standing, symptoms of thyroid *hyper*-activity supervene, which leads us to the second part of our discussion, that of



Nontoxic adenoma of twenty years' duration in a woman of 40.

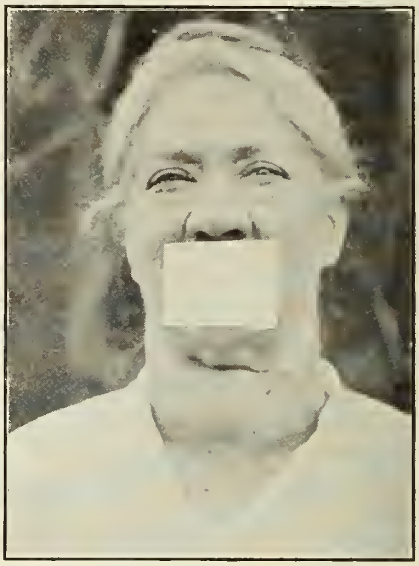
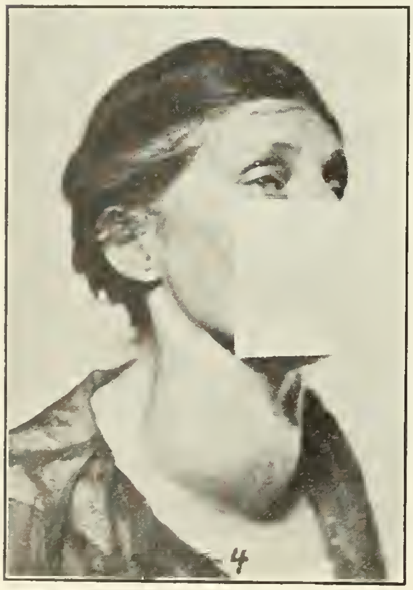


Fig. 5
Adenoma of twenty years' duration with intercurrent myxedema.



Nontoxic fibrocystic adenoma with pressure symptoms, of thirty years' duration in a woman of 47.

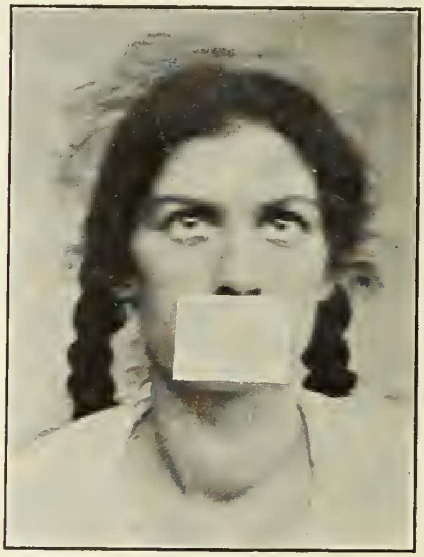


Fig. 6
Toxic adenoma with marked myocardial degeneration. (Service of Dr. S. Solis-Cohen, Jefferson Hospital.)

TOXIC GOITER (THYROTOXICOSIS)

We may define toxic goiter as a swelling of the thyroid gland accompanied by symptoms of thyroid hyperactivity. Four types of toxic goiter are recognized:

(A) *Puberty hyperplasia,* so-called, a mild form of thyroid hyperactivity accompanying puberty and adolescence, usually in a female. This type has most often a temporary status, but may merge into one of the other forms of toxic goiter.

(B) *Toxic adenoma* (secondary Basedow, "Basedowified" goiter, secondary toxic goiter, hyperthyroidism) is a superimposition of a state of thyroid hyperactivity upon an old-standing simple or nontoxic goiter. A patient having had a simple goiter for five, ten or more years, begins to lose weight and strength; there is considerable dyspnea on slight exertion, nervousness, insomnia, cardiac palpitation, a feeling of tremulousness, and within several months or a year or two, she is reduced to a mere shadow of her former self. This syndrome may be produced in most persons by the administration of large doses of thyroid extract and must not be confused with exophthalmic goiter or Graves's disease.

(C) *Diffuse adenomatosis* is the term applied by Emil Goetsch,[2] to a condition clinically simulating toxic adenoma and consisting pathologically of an unencapsulated adenoma which may or may not be perceptible on inspection. We wish merely to mention this condition as one tending to confuse the diagnostician, and since it is not often met with and is not yet clearly understood, we shall not discuss it in this paper.

(D) Finally, we come to the most important of toxic goiters—*exophthalmic goiter or Graves's disease,* which, as previously mentioned, must not be confused with toxic adenoma or hyperthyroidism. The following tabulation will assist in differentiation of the two conditions:

Toxic adenoma, (Hyperthyroidism, Secondary Toxic Goiter, "Basedowified" Goiter, etc.)

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1. Patient is usually of middle age.
2. Goiter present years after onset of symptoms.
3. Goiter is essentially adenomatous, often nodular in nature, and usually large, non-pulsating, non-compressible, without thrill or bruit.
4. Exophthalmos and expression of chronic fright rare; eyes may present a mere brilliancy or stare.
5. Tachycardia not extreme; often materially influenced by sleep and digitalis.
6. Hypertension and myocardial degeneration common.
7. Tremor often absent; if present, is coarse and atypical.
8. Mental symptoms relatively mild.
9. Dermographia often absent; when present, is not intense.
10. Loss in weight comparatively slow.
11. Symptoms may be produced in a normal person by administration of thyroid extract or thyroxin.
12. Surgical interference with thyroid eminently successful.

Exophthalmic Goiter, (Graves's disease, Basedow's disease, Parry's disease, Flajani's disease, Hyperplastic goiter, Dysthyroidism.)

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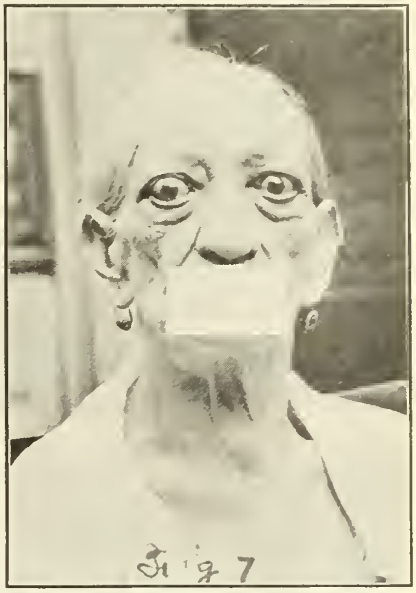
1. Patient is a young adult.
2. Goiter often absent; if present, is of recent occurrence.
3. Goiter is essentially hyperplastic in nature, rarely large; usually a symmetrical thyroid fullness, often pulsating, is compressible, and presents thrill and bruit.
4. Exophthalmos and expression of chronic fright with characteristic eye signs usually present.
5. Tachycardia more pronounced; not materially influenced by sleep and digitalis.
6. Hypotension common; myocardial degeneration may occur late in the disease.
7. Tremor nearly always present and typical.
8. Mental symptoms relatively prominent, with occasional major psychoses.



Exophthalmic goiter or Graves's disease of two years' duration in a woman of 73.

Same patient as Fig. 7, as she appeared five years before she applied for treatment.

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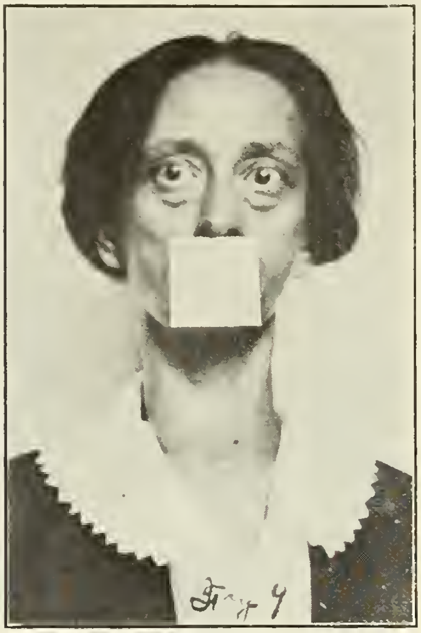
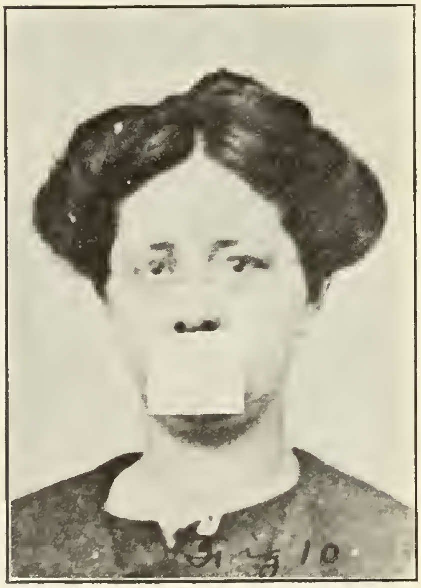
[2] Goetsch, Emil: Diffuse Adenomatcsis: Endocrinology Vol. IV, No. 3, p. 395.

9. Dermographia constant and usually intense.
10. Loss in weight comparatively rapid.
11. Syndrome not produced by administration of thyroid extract or thyroxin.
12. Surgical interference with thyroid a questionable procedure.

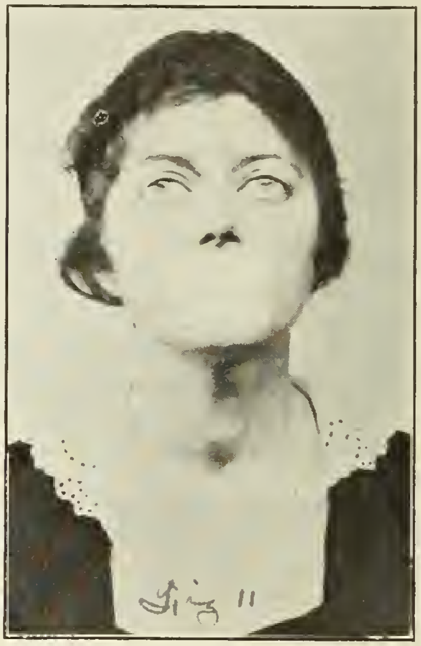


Exophthalmic goiter or Graves's disease of ten years' duration. Patient weighs 95 pounds.

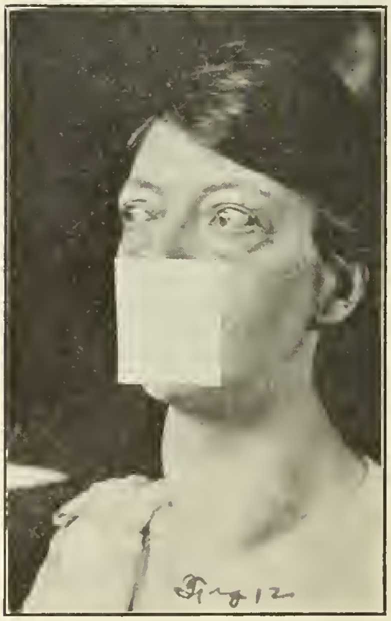


Same patient as Fig. 9. Enlargement from a tin-type picture taken ten years ago, when she weighed 180 pounds.

Parenthetically, we might state that a subject of simple or nontoxic goiter is quite as liable to develop Graves's disease as any one else, and in such a patient we have a case of *adenoma plus exophthalmic goiter* which must not be confused with toxic adenoma, as there is no necessary causal relationship between the clinical syndrome and the previously existing goiter. The differentiation, especially from toxic adenoma, is often difficult.



Exophthalmic goiter or Graves's disease as patient appeared six months after thyroidectomy. There had been no improvement from the operation, and the thyroid is beginning to regenerate into further goiter formation.

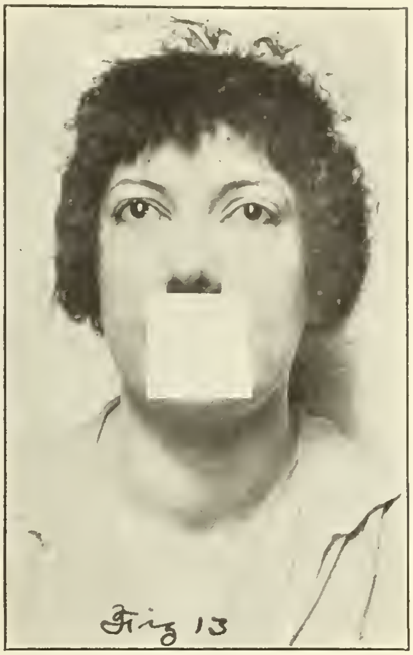


Exophthalmic goiter or Graves's disease of fifteen years' duration, with circulatory decompensation and beginning anasarca. This patient submitted some years ago to a ligation, followed later by thyroidectomy. These surgical procedures aggravated the syndrome.

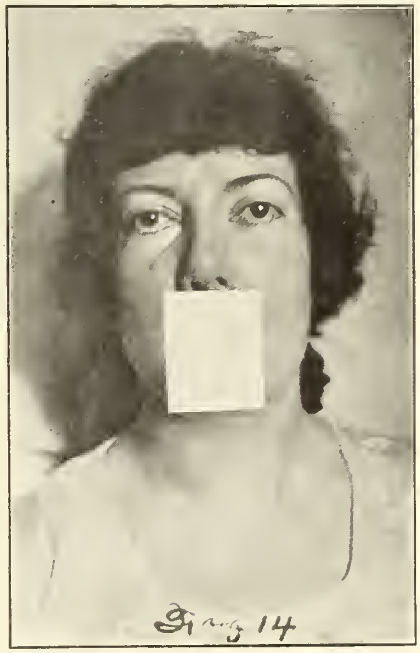
The most constant symptoms occurring in exophthalmic goiter or Graves's disease are those referable to the circulatory and nervous systems. Heart hurry, with or without palpitation, may exist many weeks before the patient is aware of it. It is for the relief of palpitation and dyspnea on slight exertion that the patient may visit the physician. The pulse rate varies from 90 to 120 or more per minute, and is not materially reduced by rest or by the administration of digitalis, even in maximum doses. Dermographia and tremor are usually present at this time. The function of the central and peripheral nervous systems is quickened in varying degree, as evidenced on the one hand by the alert mentality yet diminished ability for sustained attention, the emotionalism, changed disposition and insomnia; and on the other hand, by a heightening of reflexes and the excitability of the gastrointestinal tract (as seen in the indigestion, nausea, vomiting, diarrhea), the urinary system (as observed in the polyuria) and the cutaneous system (as evidenced by hyperidrosis and the commonly observed skin lesions).

While in some patients a slight stare of the eyes may appear quite early, in others a degree of obvious exophthalmos occurs when the disease is moderately advanced; in still others, exophthalmos is seen late in the affection or may be entirely lacking as a constituent of the syndrone. Moreover, bulging of the eyes may be unilateral, or it may be bilateral and of greater degree on one side than on the other. The various classical eye signs (Dalrymple's, Stellwag's, Von Graeffe's, Moebius', Kocher's) are usually associated with the exophthalmos.

The occurrence of goiter in Graves's disease is subject to even greater variations than exophthalmos. While the first symptom to attract the attention of the patient to the neck may be a sudden mysterious tightness of the collars or garments usually worn about the neck; on the other hand, demonstrable goiter may occur late in the disease, even after the circulatory and nervous phenomena and exophthalmos have been well established. Indeed, in not a small percentage of extreme cases, we find no evidences of thyroid enlargement. We may assume that in at least some such instances there is a hyperplasia of one of the so-called accessory thyroid glands. However, definite goiter formation is observed in from 60 to 80 per cent of cases of Graves's disease, occurring fairly early in the course of the affection. The thyroid swelling is of hyperplastic vascular nature, possessing characteristics already described in the tabulation.



Exophthalmic goiter or Graves's disease of ten years' duration with evidences of pituitary involvement.



Same patient after six months of nonsurgical management. Thyroid restored to normal. Patient feels entirely well; heart rate and other findings normal.

The classification of Graves's disease into the vagotonic and sympatheticotonic forms, as emphasized by Eppinger and Hess,[3] is of importance, but time does not permit us to describe this phase of the question, except to say that no given case is purely sympatheticotonic or purely vagotonic. Each patient presents a combination in varying degree of both, of which one, usually sympatheticotonia, predominates.

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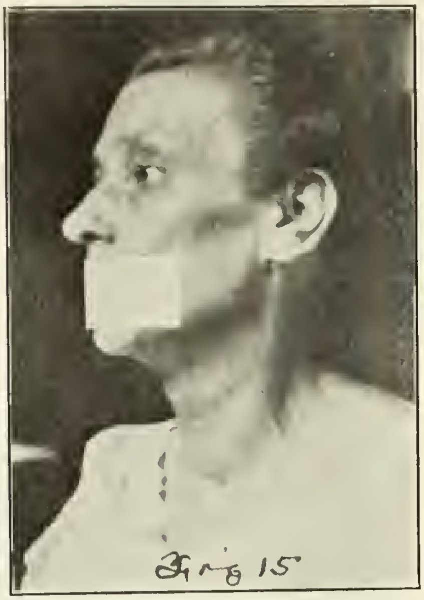
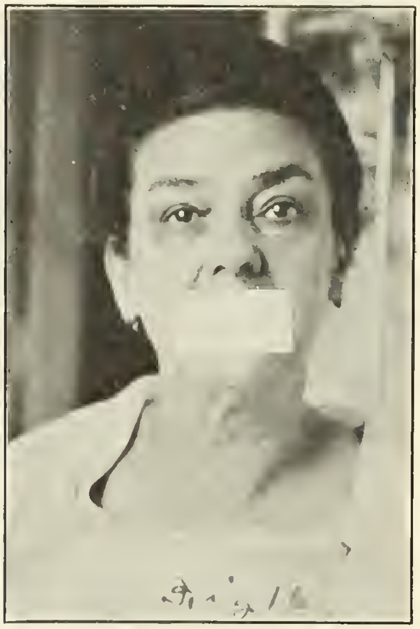
[3] Eppinger and Hess: Vagotonia; Translated by Kraus and Jelliffe, 1915.



Exophthalmic goiter or Graves's disease without exophthalmos, of one year's duration. Before the onset of the disease, patient weighed 280. Here she weighs 130 pounds.



Same patient as Fig. 15. After six months of nonsurgical management there occurred complete subjective and objective recovery with a gain of 47 pounds in weight.

The frequency with which patients are met, who, without goiter and without exophthalmos, otherwise prove to be rather advanced cases of Graves's disease, should warn us against an insufficiency in diagnostic efforts and procrastination in the institution of the necessary treatment. Presented with an atypical case of this sort, we must with reasonable certainty exclude such conditions as neurasthenia, hysteria, and the psychoses, nervous indigestion, pulmonary tuberculosis, diabetes mellitus, paroxysmal tachycardia, chorea, and other conditions characterized by one or more symptoms which simulate clearly or vaguely any of the manifestations commonly observed in exophthalmic goiter. Occasionally the conditions we are endeavoring to exclude may coexist with Graves's disease. In such an event, the difficulties confronting the diagnostician are increased, and correct diagnosis may suffer further delay. However, by means of a careful history and a physical examination supplemented with a close observation of a week or two, the man of experience with these patients will usually diagnose his case.

The following tests, some useless, others useful, are available in diagnosis of hyperactivity of the thyroid gland:

1. *Blood examination:* Patients suffering with thyroid hyperactivity present a leukopenia at the expense of the neutrophil polynuclear leukocytes, and a relative increase in lymphocytes. As the blood in other thyroid affections shows the same findings, this blood picture as a diagnostic test is only of relative value. It is well to remember that the coagulation time of the blood in subjects of Graves's disease is lengthened.

2. *Thyroid extract test.*[4] The administration of thyroid extract to a patient already suffering with thyroid toxemia aggravates the symptoms. It is for this reason that it has been administered in specific dosage at stated intervals during three or four days or longer, in order to observe whether existing symptoms are aggravated or vague symptoms rendered clearer. This test is mentioned merely to be condemned, for thyroid toxemia, formerly more or less latent, may be whipped up to become active and malignant in its course.

3. *Complement-fixation tests* have been described, but they are still in the experimental stage.

4. *Hyperglycemia test:* McCaskey,[5] Janney,[6] and others have pointed out that hyperglycemia is present in thyroid toxemia, but it can be demonstrated also in diseases of the other endocrine organs.

5. *Mydriasis test:* Loewi and Kosthing discovered that the instillation of a drop or two of a 1-1000 adrenalin chloride solution into the

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[4] Harrower, H. R.: Thyroid test in Hyperthyroidism; Medical Record, New York, August 3, 1918.

[5] McCaskey, G. W., Jour. Am. Med. Assn., July 26, 1919.

[6] Janney, N. W., Arch. Int. Med., August, 1918.

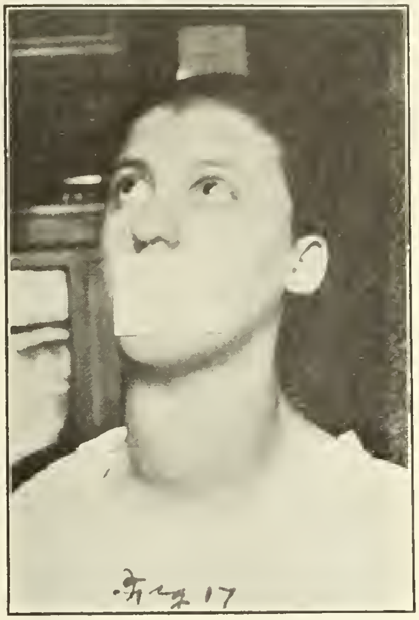
conjunctival sac results in mydriasis within thirty minutes, which reaches its maximum within one hour, thus persisting approximately fifteen hours. The reaction to light is undisturbed, though there is a reduction or absence of reaction to accommodation. This test permits of a considerable percentage of error and is of relative importance.

6. *Pituitary test:* If one cubic centimeter of an extract of posterior lobe of pituitary body is injected hypodermatically, there is slowing of the pulse within two minutes, passing off in seven or eight minutes. In normal persons the pulse is accelerated by this injection, attains its maximum in five or six minutes, and returns to normal within fifteen minutes. This test was first described by Bondouin and Porak,[7] and is fairly reliable in confirmation of diagnosis.

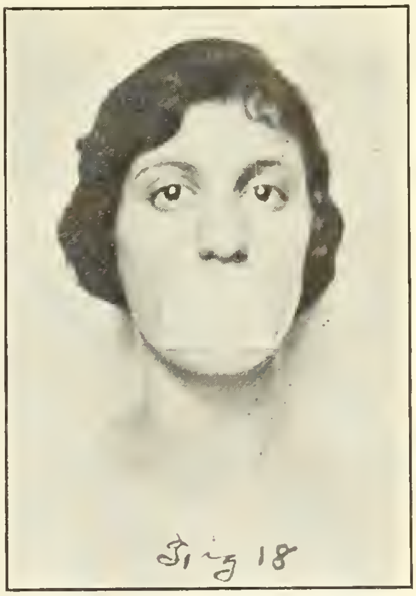
7. The *adrenalin test* described by Emil Goetsch,[8] depends upon the hypersensitiveness of subjects of hyperactive thyroid to epinephrin. The test is useful, but as in the case of other tests, is not proof positive.

8. The *basal metabolism* test is a valuable aid in diagnosis. While variations in basal metabolism may be observed in other affections, eminently in diabetes mellitus, pituitary disease, and under the influence of caffeine, it is in diseases of the thyroid that the greatest changes are observed. Thus, the differential diagnosis between toxic and nontoxic goiters and between early cases of Graves's disease (*formes frustes*) and the neuroses is rendered clearer than has heretofore been possible. By the basal metabolism determination we not only ascertain the severity of a case of toxic goiter but we obtain some idea concerning its course. However, in order to be accurate, frequent readings are necessary, for the rate often varies from day to day, and a given reading is dependable only for the time the observation is made.

9. *Quinine test:* In a previous article[9] detailing observations in a series of cases, I described a test for toxic goiter dependent upon the fact that these patients are relatively immune to the physiological effects of quinine. The technic of the test is as follows: The patient is given a dozen capsules, each containing ten grains of the hydrobromide of quinine, with instructions to take one capsule four times a day, to be washed down by an ample quantity of lukewarm water. By the time thirty, forty, or fifty grains have been taken by persons whose thyroid function is not excessive, there develops a sense of fullness in the head, impaired hearing with tinnitus, often dizziness and headache, and occasionally a feeling of slight gastric and bladder discomfort. Persons possessing a degree of susceptibility or idiosyncrasy will experience these symptoms after the first or second capsule; while those to a degree tolerant may not complain until sixty to one hundred grains have been taken. In the presence of a hyperactive thyroid,



Hypertrophic enlargement of thyroid of eight years' duration in a girl of 15, with beginning evidences of hyperthyroidism. Circumference of neck 16½ inches.



Same patient as Fig. 17, after six months of nonsurgical treatment. The circumference of the neck is 12¾ inches, her normal size. Complete subjective and objective recovery.

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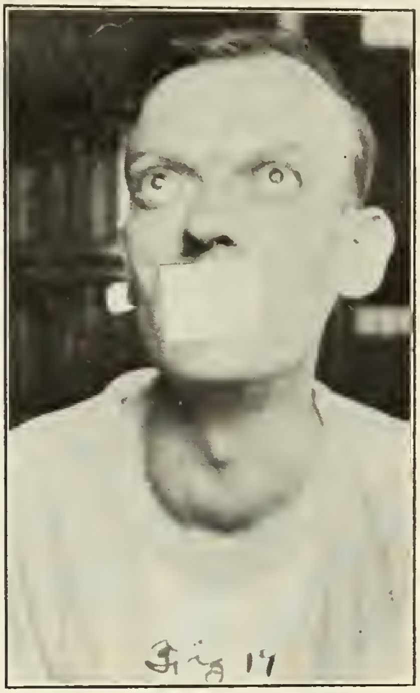
[7] McCarrison, R., The Thyroid Gland: Wm. Wood & Co., N. Y. 1917.

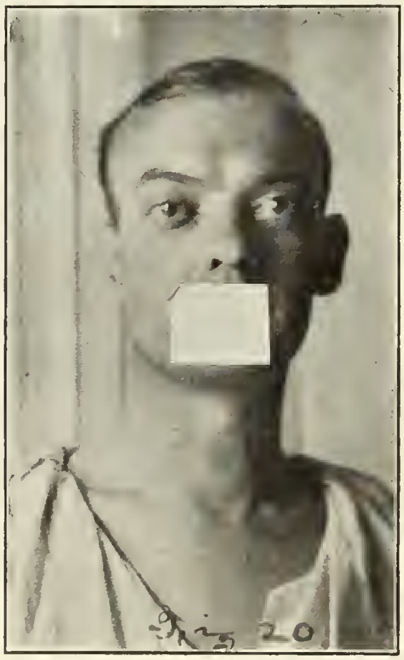
[8] Goetsch, Emil: Jour. Am. Med. Assn., XLVII, 1916.

[9] Bram, I., Medical Record, N. Y., November 27, 1920

no symptoms develop from the daily administration of quinine hydrobromide even if given during a period of weeks or months; on the contrary, improvement in the syndrome is frequently observed. In these patients, though gastric disturbances may constitute an element in the primary complaints, the administration of this dosage is apt only occasionally to aggravate slightly the gastric condition. If combined with proper gastric sedatives, however, this objection is overcome. In my experience, the chances for error in this test do not exceed 10 per cent.



Rapidly progressing form of exophthalmic goiter or Graves's disease of three years' duration, with beginning decompensation, auricular fibrillation, and a pulse rate of 180 to 200 per minute. Weight of patient in this picture is 107 pounds.



Same patient as Fig. 19, six months later. Patient, though still under treatment, has resumed his occupation. Thyroid gland is normal; there is complete subjective and objective recovery with a gain of 30 pounds in weight.

There are other laboratory tests that are in the making by investigators in this field. Up to this time, however, no test in itself should be considered a reliable guide in forming a conclusion of the existence of hyperthyroidism or of exophthalmic goiter. The clinician's diagnostic acumen should be regarded as the mainstay, laboratory tests as merely supplementary to or corroborative of diagnosis.

In conclusion, I would state that while most nontoxic goiters and toxic adenomata are surgical entities, yielding satisfactorily to thyroidectomy, the surgeon, in attacking the thyroid of a patient with Graves's disease as he would a goiter, is not attacking the patient's enemy, much less the cause of the disease, but a vital organ, the patient's ally, which is in a state of defensive reaction against toxins originating elsewhere in the body. Hence, the sooner this disease is removed from the classification of goiter, the sooner will there be an approach to a rationalization of therapeusis.[10] I base my conclusion upon the following premises:

1. There is strong enough evidence to support the belief that Graves's disease is caused by agencies away from the thyroid. The hyperthyroidism theory of Graves's disease is now discarded by the great majority of observers.

2. The thyroid in Graves's disease is often normal in size and structure and any abnormality in size and structure may be traced as a secondary event.

3. The symptoms of thyroid hyperactivity are a mere constituent of the syndrome and seem to be an expression of a defensive reaction; the major symptoms of the disease point to a generalized dysfunction of the entire endocrine and vegetative nervous systems.

4. Patients frequently present evidences of both hypo- and hyperthyroidism concomitantly or alternatingly. This fact has led Janney to advance the theory of dysthyroidism to explain the clinical picture.

5. The removal of any discoverable infectious foci and the institution of a properly outlined regimen of rest, diet, drugs, psychotherapy and other measures, applied by the experienced, individualizing internist to the sincerely coöper-

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[10] Bram, I., Jour. Amer. Med. Assn., July 23, 1921.

ating patient, result in complete recovery in even moderately advanced cases, and this *without any local therapeutic attention directed to the thyroid gland.*

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PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

THE FUNCTION OF THE CLINICAL LABORATORY

DR. E. W. WILLETTS

The object of this paper is to warn against the growing tendency to consider clinical *pathology* as a science separate from clinical *medicine.*

Laboratory methods are being used more and more in diagnosis through advance in the exact sciences and progress in devising methods of applying them. On account of this, it seems very important that clinicians should have first hand information concerning laboratory methods. The function of the clinical laboratory is to aid in diagnosis. Its findings are not as a rule conclusive but must be interpreted. Who is going to interpret them if the clinician depends on the technician because of his own lack of knowledge of technical methods; while the technician, on the other hand, has no training or, if he has, has not seen the patient?

The laboratory should be used rather than employed. On account of its having been employed so extensively there has developed a class of medical and nonmedical individuals called laboratory workers, who are looked upon as a different school of physicians or at least as specialists apart from clinical medicine, and clinicians are abandoning prodecures to them which they themselves should apply.

If the clinician who has taken the responsibility of the care of his patient needs a laboratory test as an aid in diagnosis he should be familiar with the method used, or at least with the personal views of the man whom he has employed for that test, for if he is not, he is as much in the dark as though he had sent a trained nurse to determine the presence or absence of consolidation of a certain lobe of a lung with no details explained. It is time we learned the lesson of Miles Standish: "If you would have a thing well done, do it yourself."

It may not be possible or practical for every one to have a laboratory of his own but he can have and use a microscope and enough apparatus to perform at least those things which are of a routine nature, and occasionally a little more. He can also visit a laboratory frequently and become acquainted with the other procedures which he often employs others to do for him. The same result of a test is often interpreted very differently by different people and the clinician who depends on others to do this should have a definite understanding with his laboratory man as to his way of interpreting a given phenomenon.

We have been hearing and reading much about standardization of methods in order to do away with the embroilment in certain laboratory procedure. This is a great mistake. Standardization is a blockade to progress, as has been proved many times in the history of medicine. It was tried as far back as the time of Galen, when his teaching of anatomy was adopted as a standard from which departure was prohibited. The application of hot oil to gun shot wounds and cauterization of vessels to stop hemorrhage were once standardized methods and remained so until a man with the courage of Ambrose Pare dared depart from them. Standardization will not promote mutual benefit to the same extent as personal coördination between bedside and laboratory.

SUPRARENAL INSUFFICIENCY AND ORGANOTHERAPY

DR. B. A. COHOE

In order to interpret more readily the clinical phenomena associated with a dysfunction of the gland, a brief résumé of the more important hypotheses concerning the normal function of this organ may prove helpful. The first milestone in the development of our knowledge of diseases of these glands and the rôle played by them in the body economy was reached when Addison in 1855 published his classic monograph "On the Constitutional and Local Effects of Disease of the Suprarenal Capsules." His important observation proved an incentive to physiologists in undertaking investigations towards elucidating the obscure function of the glands, an interest which from Addison's time has never flagged, and which to-day serves as the basis for many lively polemics among physiologists. In the year following Addison's publication, Brown-Sequard made the important discovery that extirpation of both suprarenal glands was invariably followed by death within one or two days, with symptoms of general weakness, convulsions and coma.

Probably the most significant fact as yet determined concerning the medulla was the discovery by Schafer in 1896 of the presence of a pressor substance and the isolation of this substance (epinephrin) later by Takamine and Aldrich. The general conclusion which Hoskins and other physiologists, who for many years have investigated suprarenal function, is that no satisfactory evidence has been adduced to show that the secretion of the medulla is of any service whatsoever in the normal state of the organism. Stewart has apparently fully demonstrated that the secretion of epinephrin is not indispensable for life.

Concerning the function of the cortex we have still less exact information. Three important hypotheses have been formulated, viz., that the function of the cortex is concerned with (1) the growth and development of the reproductive organs, (2) the neutralization of toxic substances, and (3) the internal secretion of the medulla. The view is rather generally held that it is the cortex and not the medulla which is essential for life.

Clinically the French writers, mainly, have recognized three types of suprarenal insufficiency, the acute, subacute, and chronic. The acute type is characterized by the severity of the symptoms and is usually associated with extensive destructive lesions in the glands, terminating fatally as a rule within a few days. In the subacute form the symptoms are less severe and the course may be prolonged for several weeks or months. The chronic type includes atypical cases of Addison's disease and other types arising from a purely functional inadequacy of the gland.

The acute form of suprarenal insufficiency with organic lesions, is characterized by a sudden onset, running a rapidly fatal course. The symptoms which have been found associated with this condition are in general, severe pain in the lumbar region, or epigastrium, severe gastro-intestinal disturbances, abdominal tenderness, marked asthenia, cardiac weakness and feeble pulse with hypotension, hypothermia or pyrexia, collapse, coma and death.

The anatomical changes in the glands which have been most commonly found associated with the syndrome are mainly hemorrhage into the gland substance and inflammatory changes with softening and necrosis. Occasionally suppurative processes in the gland substance have been observed.

Suprarenal hemorrhage was first recognized as a clinical entity by Rayer (1837). It is known to be a common cause of death in the newborn, and instances of sudden death in adults have been often attributed to suprarenal hemorrhage, the so-called suprarenal apoplexy.

Hemorrhage of the suprarenals has been attributed to a manifold variety of causes, including circulatory disturbance, intoxications, infections, trauma, superficial burns, asphyxia, suppurative changes in the gland substance, convulsions, neoplasm. On account of the rich vascularity of the gland, ranking next to that of the thyroid, it is believed that simple alterations in the blood supply, or a sudden rise in the blood-pressure may give rise to hemorrhage in the gland. Boinet has reported sudden death following the injection of epinephrin in Addison's disease, due to sudden rising of blood-pressure in an already diseased gland.

The possible relation of the marked prostration following an attack of influenza to suprarenal insufficiency has recently been the subject of considerable discussion. Autopsy records appear to indicate that lesions in the glands are present in a large proportion of the fatal cases. In a special study of the pathology of epidemic influenza Klotz observed changes in the suprarenal gland in 14 out of 32 cases. These changes consisted of cloudy swelling of the cortex, occasionally small petechial hemorrhages, and the almost complete disappearance of the cholesterin bodies. Other observers have found a reduction in the epinephrin content of the medulla, and more constantly a marked reduction or disappearance of the cholesterin bodies in the various infectious diseases. The suggestion has been made that increased secretory activity of the suprarenals occurs during infections as a protective mechanism, and that a mobilization of the cholesterin bodies is related to the presence of the toxins in the circulation.

The term functional is employed to distinguish this form of glandular insufficiency from the preceding types in which, apart from any developmental defect or dysfunction which may be present, secondary organic alterations in the gland substances are superimposed in the form of destructive lesions. The clinical manifestations which have been ascribed by various writers to the functional type embrace a wide variety of somatic and psychic disturbances. The main symptoms include: asthenia (physical and mental), undue fatigability, cardiac insufficiency (feeble pulse, arterial hypotension, occasional arrhythmia or bradycardia), vasomotor disturbances (sensitiveness to cold, cold extremities, slight cyanosis of extremities), gastro-intestinal disturbances (dyspepsia, constipation), psychic disturbances (apathy, aboulia, faulty inhibition, drowsiness or insomnia, headaches, paresthesias), faulty metabolism. The symptoms in the individual case may be mild or relatively severe in character, and only a few of the group present. The duration of the syndrome is essentially chronic but, if due to a temporary exhaustion of the gland, may be more or less transient.

It is now believed that many cases of functional suprarenal insufficiency are due to a congenital inferiority of the chromaphil system, a condition which is believed to give rise to certain characteristic symptoms associated with status thymicus-lymphaticus, with persistent thymus.

In regard to the use of organotherapy in such conditions it may be said that opinion is greatly divided. There are many therapeutic optimists who have reported much benefit from the administration of the gland extract and of epinephrin. Others have seen no beneficial results. In the acute type, with destructive lesions in the glands, such therapy clearly offers little hope of ameliorating the symptoms. In the treatment of Addison's disease, as is well known, any form of organotherapy has failed to yield the brilliant results attained by the use of thyroid in myxedema. Epinephrin injection has been found useful as a prophylactic measure in anaphylactic shock, and recent investigations tend to show that the partial protection afforded may be attributed to circulatory improvement and not to prevention of suprarenal failure. The use of epinephrin has been advocated in typhoid, influenza, pneumonia, and many other infections. It seems fairly well established that epinephrin given orally is almost wholly inactive. For physiological effect epinephrin should be given hypodermically and it is readily apparent that the prolonged use of epinephrin is contraindicated. There is no certain evidence that suprarenal extract given by mouth has any curative power.

As Osler has well stated, "organotherapy illustrates at once one of the triumphs of science and the very apotheosis of charlatanry. The length to which organotherapy has extended beyond its legitimate use of certain preparations is a notorious illustration of the ease with which theoretical views place us in a false position."

NONSURGICAL TREATMENT OF MALIGNANT EPIBULBAR NEOPLASMS

DR. EDWARD B. HECKEL

At the meeting of the American Academy of Ophthalmology and Otolaryngology held in Chicago in 1915, it was the writer's privilege to report a case of epibulbar sarcoma, treated with roentgen rays in 1910, with a technique which resulted in a complete cure of the malignancy and the preservation of a perfectly functioning eyeball. The success in this case was, the writer believes, the result of keeping the anterior segment of the eye ball wet during the exposure to the roentgen ray, by the continuous dropping of a normal salt solution over the eye ball. Since then we have been able to discard the salt solution, due to better and more efficient x-ray tubes. The technique employed in the following cases consisted of placing the patient in a recumbent, comfortable position. The face was covered with a piece of tin foil, perforated, with a small hole, a little larger than the neoplasm and so placed that when the patient was directed to look in a certain direction the aperture in the tin foil was directly over the neoplasm. This procedure permits the patient the free use of the eye lids so that he may wink as often as he desires; in this manner the cornea is kept moist and cannot dry.

Case 1. A. L. R., aged 71 years. Patient first noticed "a small lump on his right eye about one year ago. The eyes were negative in every other respect. R.V = 20/30; with +2.25 D.S. L.V. = 20/30; with +1.00 D.S. = +0.50 D.C. ax 60°. A small piece of the neoplasm was excised and examined by Dr. Haythorn, of the Singer Memorial Research Laboratory of the Allegheny General Hospital, with the following report:

"Section from the corneoscleral junction. Serial sections were made through the whole piece of the tissue removed. A bit of sclera shows an intense infiltration with plasma cells. The portion nearest the cornea contains several papillary outgrowths with well developed epithelial pearls. The cells near the lower portion of the epithelial layer are atypical, picnotic, and show well developed intercellular ridges. At the end nearest the cornea the cells show atypical arrangement with the formation of concentric epithelial bodies in their lowermost layer. As no stroma is present beneath the layer it is impossible to say whether actual invasion has taken place or not."

Diagnosis: Epidermoid Carcinoma

The roentgen ray was applied by Dr. G. W. Grier as follows: *First application* over the lesion, as above described, was made with 5 M.A. current at a voltage corresponding to 6½ inch parallel spark gap, the distance from anode of tube to lesion was 8 inches; no filter of any kind was used. This current was applied for 2½ minutes. *Second exposure,* five days later; the same treatment was applied. *Third exposure,* three days later; the same treatment was applied, except that the exposure was three minutes long instead of 2½ minutes. *Fourth exposure,* four days later; the same treatment as that of third. After this series of treatments the patient was given a rest of twenty-one days. At the end of this time there was still a small part of the growth remaining. Treatment was then again resumed (*fifth exposure*) twenty-four days after the fourth exposure. The same technique was used, except that this time the tube was ten inches from the lesion and the length of treatment was extended to 3½ minutes. *Sixth exposure,* three days later; he was given a similar treatment at 10 inches distance, the length of treatment was three minutes. *Seventh exposure,* two days later; he was given the same treatment as the fifth exposure. One month later the lesion had completely disappeared and remains so.

Case 2. G. W. S., aged 61 years. Patient first noticed "a small lump" on the right eyeball about six months ago. Growth quite rapid within the last four or five weeks; otherwise the eyes were negative. R.V. = 20/40; L.V. = 20/40. A piece of the neoplasm was excised and examined by Dr. Alter, of the Western Pennsylvania Hospital, with the following result:

"Specimen consists of small nodule 3 mm. in diameter. It is quite firm. Section of the small nodule shows irregular proliferation over the surface epithelium and covered with hemorrhage. The section is diagonal and the nature of the invasion is not very clear."

Diagnosis: Squamous cell carcinoma.

Dr. G. W. Grier applied the roentgen ray as outlined above: First application over the lesion, as above described, was made with 5 M. A. current at a voltage corresponding to parallel spark gap of 6½ inches. The distance from the lesion to the anode on the tube was 9½ inches. No filter of any kind was used. The exposure lasted 3½ minutes. *Second exposure,* two days later; under the same conditions. *Third exposure,* four days later; same technique. *Fourth exposure,* two days later; same technique. Patient was then given a rest for nineteen days and, as some of the neoplasm remained, he was given the *fifth exposure,* with same technique, except that the time was extended to four minutes. *Sixth exposure,* three days later; same technique. *Seventh exposure,* four days later; same technique. *Eighth exposure,* two days later; same technique. After this the patient was given a rest for twenty-three days, when the lesion had almost disappeared; but as some remained, he was given the *ninth exposure,* with the same technique. *Tenth exposure* was given; two days later, the *eleventh exposure,* and three days later the *twelfth exposure.* All trace of the neoplasm has now disappeared.

Summary of treatment of the first case: total exposures, seven; time consumed, thirty-five days.

Summary of treatment of the second case: total exposures, twelve; time consumed, seventy days.

While the results in the reported cases by the writer are all that could be desired and therefore surgical interference not justified in similar cases, he is not unmindful of neglected cases where the neoplasm projects through the lid aperature as a cauliflower growth. In such cases it would be well to excise the protruding mass with the actual cautery, heated to a cherry-red heat, and then follow this immediately with roentgen ray or radium.

INJURIES ABOUT THE SHOULDER JOINT

DR. ROBERT M. ENTWISLE

As deformities from injuries around the shoulder joint and especially fractures of the upper end of the humerus depend almost entirely upon the muscular pull on the fragments, rather than upon the type of injury causing the fracture, the anatomy will be briefly reviewed.

The large muscles on the posterior surface of the scapula, the supraspinatous, infraspinatous and teres minor, are inserted into the greater tuberosity of the humerus and act as abductors and external rotators. This abduction is further augmented by the deltoid. The subscapularis, on the anterior surface of the scapula, inserts on the lesser tuberosity and acts as an internal rotator. Adduction is accomplished by the large muscles between the chest wall and the arm—the pectoralis major, teres major and latissimus dorsi. Overlapping is easily understood by the action of the biceps, triceps and coracobrachialis.

FRACTURES OF SURGICAL NECK OF HUMERUS

A blow on the shoulder by a moving object or an individual who, in falling, fails to break the fall by the outstretched hand and thus receives the trauma directly on the upper end of the humerus, are the usual causes. This is a rare fracture in children, infrequent before 30, but common after that age. As a rule the older the patient the nearer towards the head will be found the seat of injury. The upper fragment is abducted and externally rotated by the muscles on the back of the scapula; the lower fragment is pulled in towards the chest wall by muscular pull and there is overlapping if no impaction has occurred.

This gives a normally rounded shoulder, an arm that can be brought to the chest wall, shortening, and the upper end of the lower fragment pointing upwards and inwards towards the axilla.

Treatment: The essential point in the reduction of the fracture is based upon the known position of adduction and external rotation of the upper fragment. This part of the bone is short and is covered by the heavy deltoid and is therefore very difficult to manipulate, so that the longer fragment must be brought out to meet it. Occasionally this type of manipulation in extreme abduction will effect an interlocking of the ends of the bone which will hold sufficiently to allow the arm to be brought back to the chest wall. If this is successful, an axillary pad, shoulder cap, and sling at the wrist will suffice. If the ends of the bone cannot be made to lock in this manner the injury should be treated by permanent abduction and external rotation of the lower fragment with considerable traction. In this position, the muscles originating on the chest wall and inserting into the bicipital groove are made to exert their pull in the direct line of the bone and thus pull the fragments together. If, on the other hand, the arm is brought to the chest wall these same muscles exert their force at a right angle to the lower fragment and tend to cause angulation. The Thomas arm splint is extremely satisfactory in the treatment of this fracture, as the abduction is readily obtained and considerable traction can be exerted. This necessitates confinement to bed, but this is quite desirable where the injury is one as severe as a fracture of a bone the size of the humerus. If these measures fail, open reduction should be done.

EPIPHYSEAL SEPARATION OF THE HUMERUS

The epiphyseal line runs transversely across the bone below the tuberosities. This injury occurs between the age of 6 and 20 and in all respects, except the characteristic soft crepitus obtained, is similar to the fracture of the surgical neck. The treatment is the same as outlined and union can be expected in a rather short period.

FRACTURE OF THE SCAPULA

Linear fracture of the body of the scapula is produced by direct violence, but as this bone is well protected by muscles this injury is rare. Likewise, as the muscles hold it so firmly, little treatment in the way of fixation is necessary.

Fractures of the neck of the scapula, however, are more serious. This injury gives a clinical picture which closely simulates dislocation. The head of the humerus is gone from its normal position, which gives a flat shoulder, and the line of the humerus will be found pointing inwards. The arm, however, can be brought to the side and the empty glenoid cavity cannot be felt, as in dislocations. The x-ray is essential for correct diagnosis. The treatment is aimed at forcibly bringing the humerus, glenoid and fractured portion of the neck of the scapula outwards into a normal position. After this is accomplished they may be retained by a high axillary pad with the elbow strapped to the chest wall.

DISLOCATION OF SHOULDER

The capsule of the shoulder joint is weak even though it is strengthened at several places by thickenings from the edge of the glenoid and from the coracoid process. It is also very lax, to allow extremes of motion in all directions. The muscles, however, are the protectors of this joint, the subscapularis in front, the deltoid on the outside, and the supraspinatous, infraspinatous and teres minor behind. It is thus seen that the lower portion is the only unprotected one, and it is here that the head of the humerus always emerges in dislocations at the shoulder joint.

This injury is rare in children, but very common from adolescence to old age. Its production is always the same: the head of the bone is forced against the lower unprotected part of the capsule from hyperabduction. For example, when the hand is thrown out to break a fall and fails to hold its place on the ground, it is forcibly carried upwards until it is as high as the head. The entire weight of the descending trunk is thus thrown against the upper end of the bone and the weakest portion, the lower part of the capsule, gives way. The first position of the dislocated head is directly under the glenoid fossa. From here it may go forward under the coracoid process or backward under the spine of the scapula. The position assumed is practically always the anterior one.

In the subcoracoid, the common type, resulting deformity is a springy resistance to the arm, an empty glenoid fossa, the line of the humerus pointing inwards and the presence of the head of the bone under the pectoralis major. With this there is slight shortening, as measured from the tip of the acromion process. In the subglenoid type the signs are similar, except that there will be some lengthening of the arm with the head of the bone in the axilla.

Treatment: In recent dislocations there is usually little difficulty in reduction. The Kocher method, the success of which is due to the relaxing of the subscapularis by external rotation of the arm with the elbow to the side, is the best known method and is universally satisfactory. The direct pull on the arm at a right angle to the body is an extremely simple and efficient mode of reduction. As the operator pulls and slightly rotates the arm from right to left, an assistant pushes and guides the head of the bone towards the socket. We have used this method in five consecutive cases recently, all fresh injuries, without the least difficulty. We have always used general anesthesia for this procedure, and have quite often been successful without any difficulty, where a painful failure had been the result without an anesthetic. However, Sir Robert Jones states that very many cases can be done with slight pain without anesthesia, if the operator exhibits great patience in his first motion, namely, external rotation, which tires out and relaxes the subscapularis. The after treatment consists in fixation of the arm against the chest to prevent abduction. Motion should be started early—within a week if not too painful. The amount of permanent disability is often considerable in old persons following this injury. The procedure here must of necessity be some type of open operation. If reduction of the loose head fails, the treatment resolves itself into a choice between resection of the head or union of the fracture, with the head out of the glenoid. Both are very unsatisfactory.

FRACTURE OF THE CLAVICLE

This is the most common injury about the shoulder joint and occurs at all ages. The usual site of fracture is in the outer third of the bone. The clavicle holds the shoulder upwards, outwards and backwards. An appreciation of this readily explains the deformity of the acromial fragment below and overlapping the sternal one, with the shoulder downwards, inwards and forwards.

There are many methods of treatment, and all of them universally give almost perfect functional result. From an anatomical point of view, however, the reverse is true of most ambulatory methods. This is of little importance to most men but of considerable concern to women. To quote from some lecture notes by Dr. Edward Martin: "The treatment of this injury in a debutante differs immeasurably from that of a husky Polak coal heaver." For the best anatomical and functional results we are accustomed to put the patient flat on the back on a hard bed with a small sandbag over the point of shoulder on the affected side. This necessitates absolute bed confinement with nursing difficulties, but is well worth the effort for those who are sensitive about the appearance of the neck and shoulders. Frederick B. Utley, M.D., Secretary.

ABSTRACTS FROM AMERICAN JOURNAL OF OPHTHALMOLOGY

BY MATTHEW F. CZUBAK, M.D.

PHILADELPHIA

October, 1921

Papilloma of the Cornea: *E. F. Garraghan.*—The case reported is one of papilloma of the cornea which recurred five times in two years despite removal and cauterization with the actual cautery each time. Review of the literature shows that the majority of epibulbar tumors originate in the limbus. Some recur; others do not; while in some cases the growth returns, after a lapse of years, as a malignant neoplasm.

Atypical Circinate Retinitis: *F. Yano* cites a case of bilateral atypical circinate retinitis in a boy of 13. The patient was not born of consanguineous parents, gave negative Wassermann and von Pirquet reactions and his urine was negative for albumin, casts and sugar. The eyes showed no conjunctivitis, keratitis, iritis or cataract. There was no metamorphopsia, night blindness or day blindness. The positive ocular findings were a reduction of the light sense, ring and central scotomota. Red and green color sense was lost entirely, while the blue and yellow were reduced considerably. The vision was: O.D. = 0.; O.S. = 0.1; not improved with lens. X-rays showed no change in the sella turcica and the accessory nasal cavities were normal. The organs of internal secretion were judged normal.

The fundus changes were symmetric and almost identical in each eye. These consisted mainly of a circular or oval zone of white exudation extending from the macular region to the nasal side of the papilla. The opacities consisted of numerous large and small brilliant white flecks or lines. There was a large white plaque and absence of the macular reflex ring, but no other changes such as hemorrhage or edema of the retina.

Treatment along the usual lines suggested was of no avail.

The case differs from the type commonly seen, in that it occurred in a boy, rather than in an adult of 50 or over and that the white patch extended to the nasal side of the papilla. All the possible etiological factors suggested by other writers were ruled out in this case.

Chronic Choroiditis with Liquid Vitreous and Bilateral Cataract; Operation; Good Result: *F. Allport.*—The case here reported was one of liquid vitreous and bilateral cataracts in a patient who had been suffering for years with recurrent choroiditis, iritis, and floating opacities.

The usual difficulties presented in operating a case of this sort were obviated by the measures adopted. These were: 1, the extremely good behavior of the patient under any and all circumstances; 2, operating on the bed instead of on the operating table; 3, the use of retractors instead of a speculum; 4, the prompt use of the wire loop; 5, the immediate injection of warm, sterile normal saline; 6, the extreme quietude of the patient for the first few days after the operations, produced not only by her own character but also by the aid of hypodermics of codein.

Keratitis Caused by Excessive Sugar Ingestion: *A. C. Macleish.*—Interstitial keratitis in a child of three years was due to the ingestion of an excessive amount of sugar. The child was undernourished and presented the appearance of malnutrition almost to the point of emaciation. The Wassermann was negative. In the taking of the history it was discovered that the child was allowed to eat sugar almost at will, even to eating it on green vegetables, and that this overindulgence was further augmented by a bag of "jelly beans" daily.

Under a strict diet with total abstinence from sugar and aided by simple local measures, such as hot compresses and atropine, the child improved rapidly and markedly. In two weeks the symptoms had abated and in a month had subsided almost entirely.

One year later, while the mother was in a hospital and the child under the care of a friend, the orgy of sugar was again repeated and the symptoms promptly recurred, though in a milder form. Under proper diet and withdrawal of the sugar, the condition cleared up again promptly.

Repeated Operations for Glaucoma; Report of a Case: *O. Dodd.*—This was a case in which the operator performed a Lagrange operation, trephine, extraction of cataract and excision of a membrane that closed the trephine opening. Each was done with benefit and temporary restoration of vision.

Three Cases of Word Blindness: *E. M. Alger.*—One case of acquired disability in a man of 59 and two cases of congenital word blindness in two boys, each ten years old, are reported. The cases had all been seen by ophthalmologists and had escaped diagnosis for some time.

The inability to read letters contrasted with the ease with which numerals were recognized. Objects and their uses could be recalled but their names were perplexing. The two boys were considered mentally inferior by their respective parents, friends and families as well as physicians. The adult made considerable recovery under proper treatment. With the explanation of the true nature of the condition affecting the two boys to the parents, as well as to the patients themselves, they succeeded in overcoming their defects to such an extent that each made rather remarkable scholastic progress.

Ocular Changes in Infantile Scurvy: *E. M. Blake.*—The general symptoms of infantile scurvy briefly stated are: spongy, bleeding gums; swellings and ecchymoses about joints, especially the knee and ankle; hemorrhages from the nose and other mucous membranes; extreme hyperesthesia and often pseudoparalysis of the lower extremities. There is also a marked general cachexia and anemia.

The most frequent and certainly the most striking ocular complication is exophthalmos due to hemorrhage into the orbit. Of the cases on record, approximately ten per cent presented exophthalmos.

Exophthalmos occurs suddenly and may be so slight as to be referred to as a swelling of the eye, or so marked that the eye is lost from exposure and sepsis, as occurred in the case of Mr. Sutherland of London. It may be an early sign but usually appears late. It is frequently seen after a fit of crying and may occur in one or both eyes. The exophthalmos is due to one of two causes, either a hemorrhage into the areolar tissue of the orbit, or hemorrhage beneath the periosteum of one of the orbital bones. The orbital plate of the frontal bone appears to be the most common site of the hemorrhage. When the latter extends in front of the fascia orbitalis, there is generally associated an ecchymosis and suggilation of the upper lid.

Other ocular structures are less frequently affected. Various writers have reported subconjunctival hemorrhage, flame shaped hemorrhage in the retina, blood in the anterior chamber and ecchymosis in the lower lid without any orbital hemorrhage.

The practical significance of the orbital hemorrhage and the other ocular changes recorded, lies in the fact that they may be the early symptoms and therefore be seen first by the ophthalmologist. A suddenly appearing exophthalmos in an infant is probably due to scurvy, since neoplasms and cysts never grow so rapidly and syphilis can be excluded by other signs and tests. Traumatism is often suspected because of the frequently associated hemorrhage into the lids and should lead to an examination for the signs of scurvy. Retinal hemorrhage may be more common than reported through failure to use the ophthalmoscope. Subconjunctival hemorrhage in an infant not suffering from pertussis would be a suspicious sign of scurvy. The case occasioning this paper was not diagnosed correctly until it had passed through the ophthalmologist's hands to those of a pediatrician. Under a diet of raw cow's milk and orange juice, the exophthalmos disappeared within four days and the child improved in every way. There have been no relapses.

STATE DEPARTMENT OF HEALTH HARRISBURG, PA.

More than 75 out of every 100 rural school children in Pennsylvania suffer from physical defects, and less than 25% of these ever have their defects corrected. One hundred babies out of every 1,000 born in Pennsylvania in the year 1919, died. That this death rate may be reduced and the school child be given his rightful heritage of good health the State Department of Health plans to have established health centers in every Pennsylvania community. Dr. Mary R. Noble, Chief of the Division of Child Health, State Department of Health, says, "We aim to keep the well child well, for well babies do not die."

The expenses of the Mifflintown Health Center, located in the Juniata Bank Building, are paid by the Anti-Tuberculosis Society and the Red Cross. Dr. Robert P. Banks gives his services free of charge every Friday atfernoon from 3 to 5 o'clock, when he examines the children and instructs the mother as to proper care and feeding. A class for the mothers of delicate children is also conducted on Friday afternoon. On Wednesday from 2 to 4 p.m. Dr. Banks conducts the tuberculosis clinic. Miss Elsa Auker, the state nurse in charge of the Mifflintown Health Center, is urging mothers to bring the children from 2 to 6 years of age, as well as the younger infants, so that every Mifflintown child may be equipped with good health when he starts his school life. She says: "There is a great deal of diphtheria in the country just now and a mother should not trust to luck when it comes to her child's health. It is wise to have the children examined at regular intervals. Then any physical defects which may exist can be corrected."

Miss Alice M. O'Halloran, Chief of the Nursing Division, State Department of Health, has returned from Pittsburgh, where a conference was held with state nurses from Allegheny, Westmoreland, Cambria, Butler, Lawrence, Armstrong, Beaver and Washington Counties. While health centers are established in some of these counties and in all of them tuberculosis and child health work is carried on, a campaign to interest local agencies in the establishment of baby clinics and classes for delicate children was planned.

More than 75 out of every 100 rural school children in Pennsylvania suffer from physical defects and less than 25 per cent of these ever have their defects corrected. One hundred out of every 1,000 babies born in Pennsylvania in 1919, died. Miss O'Halloran says, "The way to reduce these figures is to begin with the expectant mother; encourage her to come to the health center, teach her how to minimize the dangers of childbirth, and have her bring the child to the well baby clinic until it reaches school age. In this way it is possible for the child to start its school life unhampered by physical defects." Further, she said, "It may seem like a lot of bother to take a baby to the health center two or three times a month, but it is less bother than to have it sicken and die of a preventable disease. In September, 1,640 cases of diphtheria were reported to the State Department of Health—nearly all of it among children, and a mother cannot afford to take chances with the baby's health."

After January 1, 1922, Pennsylvania babies are going to have more than a fighting chance to grow up with their rightful heritage of strength and health.

A revision of the Pennsylvania Anti-Narcotic Act, approved April 20, 1921, amends Section 2, paragraph 2 of the act so that it now reads:

"That no preparations, remedies, or compounds containing any opium, or coca leaves, or any compound or derivatives thereof, in any quantity whatsoever, may be sold, dispensed, distributed, or given away to, or for the use of, any known habitual user of drugs or *any child of twelve years of age or under,* except in pursuance of a prescription of a duly licensed physician or dentist."

Accordingly, after January 1, 1922, no soothing syrup, infant anodyne, paregoric, or any preparation containing opium or its educts, such as morphine or codeine, may be sold to or for the use of any child twelve years of age or under, or administered to any child except on the prescription of a physician.

Dr. Thos. S. Blair, Chief, Bureau of Drug Control, State Department of Health, says: "No special regulations have been issued covering this requirement of the law, nor are any necessary, as the law is sufficiently specific, and all that the druggists need observe is that no sales of any narcotic-bearing preparation be made to or for the use of children under 12 years of age except on the prescription of a physician."

A difficulty may confront some druggists in that they have labels for paregoric giving infant dosage. It does not exact of the druggist that he destroy those old labels, but in procuring new supplies, the dosage for infants should not appear thereon.

The Commissioner of Health asks Pennsylvania citizens to coöperate in enforcing this law, stating that thousands of ignorant mothers have been doping helpless babies with the result that these children are stunted in growth; some of them become mentally deficient, and a foundation for drug addiction in later life is laid.

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February, 1922

EDITORIALS

THE DANGERS OF SPECIALISM IN MEDICINE

The development of specialties in the profession forms a very important feature in the actual work of the day. In viewing the field, the following subjects naturally present themselves: "The Education and Training of the Special Consultant"; "How Far Has Specialism Benefited the Ordinary Practice of Medicine?"; "What Are the Duties and Privileges of the Special Consultant?"; "The Proper Limit of Specialism in Medicine," etc. The science and art of medicine has, in company with other sciences, become so vast and extended that no one is capable of fully grasping and perfectly understanding every portion of it, and practicing in every line in the best manner possible. Specialism, therefore, is a natural, healthy outgrowth from general medicine, and has aided greatly in the advancement of the science and practice of medicine.

The several branches of specialties into which medicine is divided are all so great and extensive that the study and practice of one branch is sufficient fully to occupy the time and thought of any one individual, it being difficult to follow completely all the advances pertaining to any one particular line or department of medicine. In order properly to follow and develop one of the specialties in medicine, the medical man particularly should be well educated, theoretically and practically, in all the departments of medicine, and should have experience in general medicine before taking up any special branch. The highest and best type of a specialist is one who, after thorough training and experience as a general practitioner, develops a special branch in his practice, and more or less gradually comes to devote the greater part or all of his time to the same. In other words, the specialist should be a good physician, plus the particular knowledge of his specialty, or, as some one has put it, "he should know something of everything, and everything of something." It remains for the medical profession to seek so to influence and mold medical and public opinion that specialism shall be conducted in the best manner attainable.

The great danger of the age is that in the rush and hurry, the specialist must be produced to order on very short notice. The aspirant to a specialty nowadays will not devote long years in general practice, whereby he would gain acquaintance with the human system as a whole, but unfortunately, even a year or two spent as an interne in a general hospital often is considered necessary, "for," he says, "you know I am going to practice a specialty." He intimates, and often seems to believe, that it is not necessary to know much of medicine outside of the specialty at which he is aiming.

The above is not said in any wrong spirit of criticism, but is suggested by what has come under the observation of all of us for some years past, and is uttered as a warning which those most interested in the well-being of the profession at large should consider seriously. The would-be specialist of to-day too often plans to enter a specialty from the first or while in the medical college, instead of being led into it by circumstances, after experience in practice. The means by which these aspirants for recognition as specialists come before the medical profession, are familiar to all. Prominent among these is the unfortunate state of journalism, whereby, in the excessive multiplication of cheap medical journals, dependent largely upon semi-quack advertisements, there is such a demand for literary material that there is no difficulty in securing publication for everything, irrespective of merit.

One of the greatest evils is the tendency to enter the surgical specialties without sufficient training as an apprentice in an operating room, working daily alongside a master. The American College of Surgeons is to be congratulated upon the altruistic work it is doing in this regard, and it is worthy of note that at the convocation recently held in Philadelphia, out of 4,516 applicants, only 722 were admitted to fellowship.

F. C. H.

THE GALL BLADDER; CLINICAL PROBLEMS

Surgery of the gall bladder still presents, to those of us interested in its surgical therapy, unsettled problems. We must base our clinical indications not only on clinical experience but primarily on a knowledge and understanding of its anatomy, physiology and pathology. We are familiar with the anatomy of the gall bladder but we cannot say that its physiology and pathology have been entirely settled as yet. Laboratory workers are adding information which, we may be confident, will in time settle these problems.

The chief clinical interest still lies in the question of cholecystectomy versus cholecystostomy. A decade ago the majority of surgeons were performing cholecystostomy, but to-day the pendulum has swung and the majority prefer cholecystectomy. There is good clinical reason for this change in practice, but many are beginning to feel that the pendulum has swung too far in favor of cholecystectomy. It may be a platitude to say that surgery must be life-saving first and ideal afterward, but certain platitudes must be repeated now and then, and nowhere does this apply better than to the gall bladder.

Why have most surgeons adopted cholecystectomy in preference to drainage of the gall bladder? It is said that good clinical reasons existed for it. In the first place, many gall bladder cases did not stay "cured" after cholecystostomy but returned, either to the surgeon performing the original operation or to someone else, with much the same train of symptoms as before. This secondary train of symptoms was due to a return or persistence of the original trouble so that it became apparent that in order to affect a lasting cure one must do more, in these instances at least, than mere cholecystostomy. So acting on the experience gained in surgical therapy of the appendix the gall bladder was removed, and this was found to be an improvement over cholecystostomy. Its removal also prevented, so clinicians at least believe, malignant disease which is so hopeless when encountered in this organ at operation. What then are the indications for removal of the gall bladder? To state them briefly we may say: First, disease of the gall bladder itself, which will include cholecystitis as well as the more advanced forms of infection involving its walls, as suppuration and gangrene. Second, gall stones in the gall bladder, associated with disease of the gall bladder wall. Third, early malignant degeneration of the gall bladder wall. Fourth, the small, shrunken, incapacitated gall bladder, the seat of previous and prolonged infection. Fifth, chronic pancreatitis.

Bearing these indications in mind, certain other indications will arise to make us hesitate to remove the gall bladder and should lead us to consider and usually to perform simple drainage. Realizing, then, that we are adopting life-saving and not necessarily ideal surgery, what are the indications for cholecystostomy? First, in the patient so acutely ill that the least possible should be done. This group will include certain cases of cholangitis where we wish to drain the biliary system, the gall bladder giving us a good medium through which this may be done, as well as certain cases of suppuration or gangrene of the gall bladder wall, in which adhesions and the condition of the patient make it unwise to attempt cholecystectomy. To this first group may be added a *second* in which the gall bladder may contain infected bile or even stones, and yet the gall bladder itself may be free from disease. We believe this group is small.

E. A. Graham showed about five years ago that the liver was infected in every clinical instance of cholecystitis coming to his observation, and this year he and his coworkers added evidence that cholecystitis, when produced in experimental animals, was always accompanied by liver infection. He was able to show a chain of lymphatics connecting the gall bladder and liver, and submitted this as the basis for the assumption that a vicious circle exists between the two and that this fact is an added reason for preferring cholecystectomy instead of cholecystostomy. While we have not attempted more than to briefly outline indications, it seems that in view of what we now know, we should continue to prefer cholecystectomy to cholecystostomy. We must remember, however, that the physiologist may show reason why the gall bladder should be retained, if possible, and that cholecystectomy is a more serious operative procedure and therefore attended with a slightly greater immediate operative mortality.

Granted that a cholecystectomy is to be done, a question of great importance to consider is whether or not we shall employ drainage following it. A. Murat Willis called attention some years ago to the fact that better reasons existed for leaving out this drainage than for its use. The majority of surgeons were then, and for that matter still are, employing drainage following cholecystectomy. Willis reasoned that general experience in abdominal surgery was pointing to the fact that drainage is not only often unnecessary but actually does harm. Pelvic surgeons have quit using drainage to a large extent. Why could this not be done in the upper abdomen? If we can avoid the use of drainage, Willis argued that there should be fewer adhesions, a stronger abdominal wall and a smoother, more comfortable, convalescence. He was able to show experimentally that even though infection of the abdominal cavity did occur, the drain became walled off in a few hours and was, therefore, useless. Furthermore, he showed that the drain did not only prevent infection from occurring, but that it actually served as a portal of entry to infection, and that even though bile escaped it did no harm in the majority of instances. In his last report there were 72 cases recorded closed without drainage, two of which died. In neither of these fatal cases, however, was there any escape of bile. Others have taken up this suggestion, as for example, Richter and Bottomley, and report favorably. The reasons for the use of a drain following cholecystectomy are two, namely: oozing from the bed of the gall bladder, and escape of the bile. We agree with Willis that the former danger is exaggerated and can be largely eliminated by the judicious use of a hot saline pack at the time of operation, and that escape of bile should not occur if the cystic duct is doubly ligated. Certainly, as Moynihan has pointed out, the time has come when the use of drainage must be defended, and we believe there is no good reason for continuing its use here as a routine measure. In the exceptional case where oozing cannot be controlled or where sepsis is already present, it is still conservative practice to drain. It seems that the wise surgeon adopts the best in all the suggestions made, but keeps free from entangling hobbies. J. S. R.

PROFESSIONAL INFLUENCE

At the evening meeting of the House of Delegates of the Medical Society of the State of Pennsylvania, held October 3, 1921, a motion prevailed that "The Committee on Public Health Legislation be directed to secure medical writers, to write on subjects of medical importance and to publish articles in the magazines and other papers they may select." The object of the resolution was to enlighten the public on health matters and along lines in which they are being misled.

The Allegheny County Society has started the work by creating a Department of Public Health Relations, which has employed a writer to edit articles for publication in the lay press. The committee has also made its influence felt, as is evidenced by an article appearing in the *Gazette-Times* of Pittsburgh under date of January 1st, announcing the appointment of Dr. Carey J. Vaux as a member of the cabinet of Mayor Magee and as head of the Department of Health, a position held by a layman under the last administration. What is, however, most significant is the reason for the appointment as given by the mayor: "Dr. Vaux was suggested to me by the Public Relations Committee of the Allegheny County Medical Society, of which society Dr. Vaux is president."

This is very significant. It bears out the assertion frequently made that a united effort by the profession, having for its object the welfare of the public on matters of health will not go unheeded by those in authority. A county medical society, because of the intimate relationship existing between its members and the public, is a potential force in shaping health legislation. The personal contact of the doctor with those under his care, places him in a position where he can wield considerable influence by well directed suggestions, for the advancement of all measures having for its object the health of the community and the placing of such persons in positions of authority as will see to the enforcement of existing laws.

The Allegheny County Society is to be commended for its efforts and to be congratulated on the success so far attending the work of its new department. We hope the other societies in the state will very shortly establish similar departments. It is a new field, but we are optimistic and believe the near future will see the profession in its proper place, fulfilling those duties which rightfully belong to it. I. G. S.

TREATMENT OF PARESIS

In reviewing the treatment of paresis, one is forcibly impressed with the difference of opinion prevailing between the neurologist and psychiatrist on this subject. The one offers a spirit of optimism as to the results obtained with mercury and preparations of arsenic, while the other portrays a spirit of pessimism.

The difference of opinion resolves itself into this: Both schools recognize the three types of neurosyphilis—the vascular, the meningeal and the parenchymatous type. Those who are optimistic claim to have obtained results in the treatment of all types of neurosyphilis, while the others claim it is impossible to reach the parenchyma of the central nervous system with any known medicinal remedy. The former school advocates the treatment of paresis, regardless of the duration of the disease, with mercurials, iodides and arsenical preparations, intravenously, intraspinously, subdurally and intraventricularly. The other school claims that treatment with mercury, iodides and arsenic is indicated in the vascular and meningeal type of neurosyphilis, but holds forth little encouragement in paresis. They recommend spinal drainage as producing results more comforting to the patient.

Both schools are possibly in error, the former assuming unjustifiably a too aggressive attitude as relates to treatment, the latter, a too pacific one, as paresis is not only a disease of the parenchyma but of the blood vessels and meninges as well. Furthermore, a differential diagnosis of the three types of neurosyphilis is prone to error and a favorable case may be deprived of treatment.

Would it not be well, therefore, to bring about a compromise between the two schools, in order that the general practitioner and the hospital physicians may pursue some definite course as relates to the treatment of this disease? This could possibly be accomplished by agreeing that all cases of neurosyphilis, paresis included, should receive mercury, iodides and arsenical preparations, the latter intravenously only, spinal drainage to be used when indicated, and the clinical symptoms and laboratory findings to be the indicator for continuation or cessation of treatment. Such an arrangement would at least place the treatment of paresis on a definite working basis and afford results from which some definite conclusions could ultimately be drawn. J. A. J.

EX LIBRIS MEDICI

THE DOCTOR AS A HUMORIST

The doctor most frequently met in the world of books is a subordinate character, introduced either as a matter of necessity, or to round out the general perspective of society. Thus, in the first case, the hero of the story fights a duel or meets with an accident, or the heroine faints or suffers from that common literary malady, "brain fever," and a doctor has, *perforce* to be introduced; or, in the latter case, there is a dinner party or some other social gathering, and together with the minister, the lawyer and the other great lights he is, of course, invited. In either case the author ought to be very careful in his treatment of him, for it is in his power to make or ruin his reputation. Usually the doctor says very little, or he discusses philosophy or politics or some other nonprofessional subject, which is well, for few indeed are the writers that know what a doctor thinks about or the strange opinions he is apt to hold about things in general. If notice is taken of what he says, it will commonly be found to be inane; if he does something it is usually the wrong thing. This only shows the author's ignorance of the medical mind.

But there are notable exceptions. Balzak knew doctors quite well and has no less than twenty-eight of them in the "Comedie Humaine." Can any one read those pages without feeling acquainted with at least two, Horace Bianchon and Desplines? They come and go through volume after volume. They are good doctors, society doctors, well educated, well informed, usually well groomed, and, let us hope, usually well paid.

Occasional writers give us glimpses of doctors that are really like doctors, and seem to talk and think as they do. Mary Mapes Dodge, in her well-known book "Hans Brinker," introduces Dr. Boeckman, who discovers a similarity between the symptoms shown by Hans' father and a case operated upon by one of his distinguished contemporaries, and suggests that cure of the invalid may be possible by similar treatment. He explains the details and purposes of the operation to his assistant:

> "Did the man live?" asked the assistant respectfully.
>
> "I believe he died, but why ask such a question? Why not fix your mind upon the grand features of the case?"
>
> "You have," said the assistant, "other engagements to-day; three legs in Amsterdam, you remember, and an eye in Brok, and that tumor up the canal."
>
> "The tumor can wait," said the doctor reflectively.

Does not that seem like a real medical conversation?

Sometimes the doctor represented is simple minded and genuine. Is there a more ingenuous character in literature than Dickens' Dr. Bayham Badger, in "Bleak House"? He leads Mr. Jarndice into the drawing room, saying:

> "Perhaps you may be interested in this portrait of Captain Swosser. It was taken on his return home from the African station where he had suffered from the fever of the country. Mrs. Badger considers it too yellow. But it's a fine head. A very fine head. I feel when I look at it, that's a man I should like to

have seen. It strikingly bespeaks the first-class man that Captain Swosser preëminently was.

"On the other wall, Professor Dingo. I knew him well—attended him in his last illness—a speaking likeness.

"Over the piano, Mrs. Bayham Badger when Mrs. Swosser. Over the sofa Mrs. Bayham Badger as Mrs. Dingo. Of Mrs. Bayham Badger *in esse,* I possess the original and have no copy."

Where, apart from the imagination of Mr. Dickens, could a man be found to take such pride in being Mrs. Badger's "third," and falling heir to the relict of "Captain Swosser of the Royal Navy" and of "Professor Dingo of international reputation"?

If one reads the writings of Mrs. Margaret Deland one after the other, he feels that for the troubles of the soul there can be no doctor like the good old clergyman, Dr. Lavendar, and for the ills of the body none equal to Dr. Willy King. Both run through many of the stories; the reader becomes personally acquainted with them, and it is with tears in his eyes that he realizes the former's days are numbered. If Mrs. Deland ever writes an account of the death of Dr. Lavendar, it will surely break the hearts of many of her devoted readers and admirers. Just a brief glimpse of both men in action:

Willy King's buggy, splashed to the top of the hood with mud and sagging sidewise on its old springs, came pulling up the hill past the burial ground. The doctor himself curled up in one corner, rested a leg on the dashboard and hung his reins on the hook over his head. He was very sleepy for he had been up until three with an old woman who thought she was sick, and he had been routed out of bed at five because she thought she was going to die. William King was not given to sarcasm, but he longed to say to the waiting relatives, "There's no hope, she'll live!" Instead he looked seriously sympathetic and kept his thoughts to himself. When he got home to breakfast, his wife told him how foolish he was to take so much trouble.

"There's nothing the matter with Mrs. Drayton, and I should tell her so flatly and frankly. It would do her good."

William said that he would like another cup of coffee.

"It wouldn't be good for you," said his Martha. "You are drinking too much coffee. You can have some shells if you want to. Shall I have some shells warmed up?"

William said "No," and went trudging off to his office; and there at ten, started on his round of calls, his old buggy still unwashed from the morning jaunt to the hypochondriac's deathbed.

* * * * * * *

"I'll say good day, Mrs. Drayton," interrupted Dr. Lavendar, "and as for your question about the unpardonable sin, ma'am, why, just be ready to forgive other folks and you needn't be afraid of the unpardonable sin yourself."

He took his hat and stick and went thumping down the stairs. In the hall he met William King going up to see the invalid, and said with a gasp, "Willy, my boy, a good, honest murderer is easier to deal with than some milder sorts of wrongdoing."

"Dr. Lavendar," said William, "I'd rather have a patient with smallpox than treat some lighter ills that I could name."

* * * * * * *

"Miss Harriet," said William, chuckling, "you won't tell anybody, will you? But Mrs.—well, I won't mention names, that's not professional—"

"Call her a 'female,'" said Miss Harriet.

"Well, a 'female' sent for me on Tuesday, in a dreadful hurry; I must come 'right off! Quick!'" I was just sitting down to breakfast, but of course I ran."

"Martha must have been pleased."

"I ran and arrived winded. 'Oh,' said she, 'Doctor, the baby has slept right through since six last night, and he hasn't waked up yet. I'm afraid there's something the matter with his little brain.'"

"William, if you didn't say there was something the matter with her little brain—"

"I didn't," said William, grimly, "because she hasn't any."

Can anyone say that these do not sound like the everyday experiences and conversations of a doctor?

In his novel, "Main Street," Sinclair Lewis has given a fine picture of a capable, sensible, and hard-working doctor. Dr. William Kennikott, married to a flighty girl from the big city, found himself hampered by a kind of "sociological messiah, intent upon the salvation of Gopher Prairie." Many do not like the book, and detest its incomprehensible and incorrigible heroine, but that does not interest us. The doctor's portrait is so well drawn, and his actions and conversations so well done that for a long time we believed the author must, himself, be a doctor, or have pursued a medical education. The true explanation was at length forthcoming—his father was a physician and he grew up in the "medical atmosphere."

COMMUNICATIONS

To the Editor of The Pennsylvania Medical Journal:

Sir: Dr. Joseph McFarland in his admirable little paper on "Profitable Reading for the Doctor" in the December issue of the Journal reveals himself as a well read man; and I have scanned with the greatest interest the list of books which he offers—a truly admirable one. There are a few books I should like to see added to this list; chiefly Montaigne's "Essays," from which I have learned more philosophy of life and more psychology than in all the technical books on these subjects that I have read. And among the religious essays he certainly should have included the book of "Ecclesiastes" and the "Proverbs."

It is the duty of every man to avoid being a bore—and I suppose no man can *completely* succeed in this. But certainly he is much better equipped if he has his mind stored with reading from authors such as Dr. McFarland suggests and with current events. It is utterly amazing how often one is irritated and disgusted by the way in which some excellent medical man will waylay him at inappropriate times on a street corner, or in a street car, and go over some "interesting (?) case"! I am bound to agree with what Dr. McFarland says: "Medical men of to-day are technically well educated but not generally educated at all."

I am not myself a college graduate, and under the present day requirements could not have qualified to enter medical school; but I have often tried to estimate the educational status of college men; and I have rather reached the conclusion that men who have gone through college may or may not be educated. I am utterly amazed at how little general literature some college men have read. Indeed the thing seems to interest them hardly at all. Like Dr. McFarland, I have often casually talked to students and internes on the subject of general literature. I have rarely found that they were interested. Those who had read the books had done so because it was required. Their attitude appeared to be that now they would dismiss them from their minds and get down to what counted—that is technical literature on medicine and surgery.

Often one hears physicians say that they do not have time for general reading. This makes one smile when he realizes that our greatest physicians are all busy men and have almost without exception been well acquainted with general literature. One has only to recall the names of Osler, Weir Mitchell and Jacobi and the brilliant group of Boston physicians to sustain this contention.

I recall a most devoted country practitioner of Clarion County who read many good books and who was well acquainted with Boswell's "Johnston" and knew it far better than I did; but I did know enough to ask him questions and to converse with him. His appreciation and enthusiasm were delightful.

Some little while ago I happened to have an appointment with a Philadelphia surgeon, whose name is known nationally and internationally, and with a distinguished judge. I found these two men engaged in earnest conversation on the character of Jefferson as revealed in Beveridge's "Life of Chief Justice Marshall," a work both these men had just finished reading. I went home and immediately bought this book; its perusal has been a source of pleasure and profit to me.

It is true enough that if a man is in the medical profession, the technical part of the thing must command his chief attention; but if it commands *all* his attention, and he has time for nothing else, he is apt to be stale and is sure to be a bore. He should have time for some physical exercise such as golf, tennis and hand ball, which have their place. Every physician should from the start make it his business to do some general reading and jealously limit the time he devotes to the newspapers. All things being equal, he will become a better doctor and a happier man and have done a great deal in making his society acceptable to those with whom he comes in contact if his mind is stored with the reading of good books.

I trust Dr. McFarland's list will be cut out from the Journal and preserved for reference.

Theodore Diller.

Westinghouse Bldg., Pittsburgh, Pa.

January 1, 1922.

To the Medical Profession of Pennsylvania:

Just a word from the Medical Legislative Conference of Pennsylvania to the Medical Profession of the state:

During the year 1922 there will be up for your suffrage men to be nominated and elected to the Senate and House of Representatives.

It behooves the profession, being interested in the health and welfare of the people of the commonwealth, to see to it that none but men who will protect the people's interest shall be sent to Harrisburg.

In view of this it is very necessary that every member of the profession should register, so that he can vote at the primary election in May and have a voice in the nominating of the men who will be elected in November and who will serve in the Legislature in 1923.

With this humble word of admonition and with best wishes, I am,

Fraternally yours,
G. A. Knowles, M.D.,
President, Medical Legislative Conference.

USE OF DRUGS IN INFANCY AND CHILDHOOD

In order to establish a standardized list of drugs essential to the treatment of the diseases of infancy and childhood, Henry F. Helmholtz, Rochester, Minn. (*Journal A. M. A.*, Oct. 8, 1921) selected from the pharmacopeia a list of sixty-one drugs. This list he sent to eighty-four men who are limiting their practice to pediatrics, with the request that they check the drugs listed and add to them any drugs which they considered essential in their practice. Of the eighty-four men, sixty-four responded. Only mercury in some form and santonin, on the list submitted, are used by all sixty-four men. Besides these, silver, arsenic, iron, sodium bicarbonate, cod liver oil, and at least one representative of the opium series, the antispasmodics, heart and circulatory stimulants, hypnotics, laxatives, antipyretics, anthelmintics and urinary antiseptics, were used by sixty men of the sixty-four. One-half of the men used forty-three of the drugs indicated on the list. Fourteen added milk of magnesia, and three or more added benzyl benzoate, hyoscyamin, chloroform, agar-agar, creosote, chenopodium, glycerin, and tincture benzoin compound. One man added thirty-eight drugs to the list. The drugs in this list can be readily divided into four groups. The drugs in the first group have specific indications: for example, mercury, arsenic, quinine, santonin, male fern, and so forth, act directly in destroying parasites, and the drugs such as silver, hexamethylenamin and the salicylates, have definite antiseptic powers for destroying bacteria. The indication for the use of these drugs is usually given with the diagnosis of the disease. The drugs in the second group regulate the function of the different organs; for example, digitalis, the group of laxatives, and the diuretics. The third group is essentially for the symptomatic treatment of disease, as morphine for the relief of pain. The fourth group consists of drugs that are used for a specific purpose, and for practically no other, such as phosphorus in the treatment of rickets and spasmophilia, mustard for counterirritation, and phenol (carbolic acid) for the infections of the middle ear. The treatment by drugs of diseases in infancy is influenced in its effectiveness by the factor of nutrition and growth. This is perhaps best expressed by the statement that as long as a child eats and digests well there is a good chance for recovery. A drug which acts favorably on the disease focus but interferes with the nutrition of the child is harmful. The effect of the so-called tonic treatment during the active stage of disease is another example of the failure to recognize the nutritional factor in disease.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

MAY 16, 1922

The spring primary date is May 16. This year Pennsylvania chooses its governor, lieutenant governor and secretary of internal affairs, two United States senators, all of its congressmen, half of its state senators and all of its members of the House of Representatives. If we are good citizens we will be interested in the selection of better citizens to represent us in all of the above mentioned offices. If we are conscientious doctors of medicine we will be interested in the education of candidates for legislative offices to the necessity for a single standard of preparation for all practitioners of the healing art.

If every county medical society in the state will repeat the tactics of the pre-primary months of 1920, the task of the Medical Legislative Conference in achieving the enactment of a "one board bill" in 1923 will be rendered easy. Let us remember the free and easy discussions between county medical societies and legislative *candidates* regarding compulsory health insurance and enjoy the same privileges in March, April and May, 1922.

CRASH!

With the appearance of an advertisement for osteopathy in a recent issue of the *Saturday Evening Post*, some of the earlier ideals of Edward Bok (see "Americanization of Edward Bok") must have come crashing about his ears.

The advertisement refers speciously and expediently to the present-day requirements for a degree in osteopathy, without referring to the *fact* that from 1900 to 1920 thousands of six weeks' to six months' students were graduated in osteopathy and released to practice among people who recognize only the licensing power of the state over practitioners of the healing art, and look not to the preparation of the healer.

During the "six weeks' to six months'" period in the history of osteopathy above referred to, the requirements for a degree in medicine advanced from (1895) a high school preliminary course, plus four *calendar* years in medical college, to (1915) a high school diploma, plus two years' college work preparatory to a four years' medical college course, and one year of hospital internship.

The editors of the *Saturday Evening Post* must be well aware of these facts, and they must know also that the financial success of the osteopathic colleges and the popularity of this back lot shortcut to the practice of medicine have led to the more recent development of the chiropractic industry, with its numerous "colleges" and its flood of "six weeks' to six months'" graduates (1910 to 1920), who have, without any requirements except the ever necessary tuition fees, stepped from the ranks of respectable finished chauffeurs, soda bar tenders and paper hangers to the doubtful rôle of healers.

The editors of the *Saturday Evening Post* must know that these osteopathic colleges do today but illy fill the places of the poorly equipped money-making medical colleges that happily passed out with the nineteenth century, and we all know that in a few years the chiropractic colleges will don their raiments of pseudo-respectability and in their turn prattle, possibly through the advertising columns of the *Saturday Evening Post*, of their high requirements preliminary to a chiropractic degree.

In the meantime what happens to those who consult such healers? They lose precious opportunities in the prevention of contagious and infectious diseases, precious time in the recognition of malignant diseases, and receive the lowest quality of treatment through the ministration of thousands of ignorant graduates from osteopathic and chiropractic colleges who flout the germ theory, jeer at the necessity of proper diagnosis, but who eventually, almost without exception, having entered by the back door, begin, despite their lack of qualification or license, to practice medicine, dispensing or prescribing drugs and performing surgical operations.

Surely the editors of the *Saturday Evening Post* will join the Medical Legislative Conference of Pennsylvania in its campaign for, first, a single standard of education for those who would diagnose disease; and second, a definite adherence to any narrow system of treatment if candidates for licensure choose to seek training in but one method of treating disease. We know full well that few high school graduates, and still fewer college graduates, will choose to limit their undergraduate training in the treatment of disease.

DUES AND MEDICAL DEFENSE

As night follows day, so does that safe sense of security against suits for alleged malpractice follow the prompt payment of county medical society dues. The 28th of March will roll around before you know it, and if your 1922 dues are not paid before that date, you will then enter a period of time during which you will be deprived of medical defense by your State Society. No matter how obscure or how prominent you may be as a physician or member of your community, you are never free from the danger of such suit. A news item from Chicago under date of December 8, 1921, stated that a jury had awarded $10,000.00 damages for malpractice incidental to an operation by one of the leading surgeons of the United States. Our own records contain many instances where suits were threatened or instituted against our members on charges based apparently on the most trivial surgical or medical services.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to January 15:

Allegheny: *New Member*—Francis X. Straessley, 621 Pressley St., Pittsburgh. *Removals*—L. M. Kridel, from 373 Semple Street to 629 E. North Ave., Pittsburgh; J. B. McConnaughy, from 5460 Penn Ave., Pittsburgh, to Rossiter, Pa.; John Huber Wagner, from 7 Highland Court to 1519 S. Negley Ave., Pittsburgh; M. A. Bradford, from 41 Wabash Avenue to 2916 Mattern Ave., Dormont, Pittsburgh; O. T. Staufft, from 1438 Columbus Avenue to 1159 Davis Ave., Pittsburgh.

Armstrong: *Transfer*—Isaac Z. Stalberg, Furnace Run, from Clearfield County Society.

Butler: *New Member*—Willard L. De Wolf, 207 So. McKean St., Butler.

Clinton: *Transfer*—Joseph M. Corson, Hughesville, to Lycoming County Society.

Columbia: *Transfer*—John M. Gemmill, Belle Vernon, to Fayette County Society.

Dauphin: *New Members*—Charles B. Fager, 410 N. Second St.; W. Minster Kunkel, 601 N. Front St.; Mary Riggs Noble, State Dept. of Health, Harrisburg. *Transfer*—Alfred P. Isenberg, 141 W. Greenwich St., Reading, to Berks County Society.

Erie: *Death*—Row O. Woodruff (Univ. of Vt., '99), of Waterford, aged 49.

Fayette: *New Member*—J. Glenn Hemington, 39 Morgantown Place, Uniontown. *Transfer*—Alfred C. Smith, So. Brownsville, to Acadamy of Medicine, Columbus, O.

Franklin: *New Member*—William B. O'Rear, Waynesboro.

Lancaster: *Transfer*—David C. Posey, Christiana, from York County Society. *Death*—Milton U. Gerhart (Univ. of Penna., '77), of Lancaster, Jan. 11, aged 71.

Lycoming: *Transfer*—Charles E. Allison, 2017 W. Fourth St., Williamsport (formerly of Elysburg), from Northumberland County Society.

Montgomery: *New Member*—J. Le Roy Roth, Conshohocken.

Northampton: *New Member*—Charles E. Meixsell, 1203 Main St., Northampton.

Northumberland: *New Member*—Albert T. Griswold, Trevorton.

Potter: *Transfer*—A. Jackson Colcord, Port Allegany, from Lackawanna County Society.

York: *New Member*—Herman A. Gailey, County Club Road, York.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since December 16. Figures in first column indicate county society numbers; second column, State Society numbers:

1921				
Dec. 17	York	123	7340	$2.50
	Montgomery	155	7341	2.50
22	Fayette	125	7342	2.50
1922				
Dec. 17	Venango	1	67	5.00
	York	1	68	5.00
20	Bradford	1–10	69–78	50.00
22	Wayne	1–7	79–85	35.00
23	Northampton	1–34	86–119	170.00
24	Columbia	1–9	120–128	45.00
28	Elk	8–9	129–130	10.00
29	Northampton	35–42	131–138	40.00
31	Wyoming	1–6	139–144	30.00
Jan. 3	Allegheny	1–20	145–164	100.00
	Butler	3–5	165–167	15.00
	Montgomery	1–21	168–188	105.00
4	Washington	11, 13, 14	189–191	15.00
5	Northampton	43–45	192–194	15.00
7	Dauphin	1–15	195–209	75.00
	Mercer	1–2	210–211	10.00
	Northumberland	1–8	212–219	40.00
	Somerset	6–9	220–223	20.00
	Clarion	1–17	224–240	85.00
	Mifflin	6–11	241–246	30.00
12	Mercer	3–8	247–252	30.00
13	Bradford	11–20	253–262	50.00
	Butler	6–10	263–267	25.00
	Somerset	10	268	5.00
	Potter	1–5	269–273	25.00
	Montgomery	22–63	274–315	210.00
	Westmoreland	1–39	316–354	195.00
	Allegheny	21–111	355–445	455.00
14	Mercer	9–13	446–450	25.00
	Juniata	1–2	451–452	10.00
	Armstrong	1–22	453–474	110.00
	Franklin	1–9	475–483	45.00
	Juniata	3	484	5.00
	Elk	10–13	485–488	20.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

212 N. Third St., Harrisburg

SOCIALIZED MEDICINE

The average practitioner of medicine to-day, who is not connected with some work linked up with the department of government, or who may not have been given the opportunity to become acquainted with the status of the practice of medicine as it operates to-day, can have no conception of the undercurrents which are affecting the practice of the healing art. To the average practitioner there is no disturbance, there are no undercurrents, there is no such possibility as socialized medicine; but let us candidly view the matter in a broad sense.

As a member of the Michigan State Medical Society says, in discussing this subject, "If we are fighting to-day with our backs to the wall to prevent the socialization of medicine and the degradation of the individual, it is because, in our race for bigness, we have permitted our moral and intellectual clearness to be befogged." It is this peculiar outgrowth of a long history and tradition affecting the practice of medicine that makes us individualistic. It makes us aloof from anything that does not affect our immediate conditions. The past we know and of the future we care little so long as we are not disturbed in our local environment.

But, friends, those of us who realize that something is occurring in the practice of the healing art, and that the public are more aware of this change than we who are delivering the goods, is it not time for each individual, no matter in what position or station his practice may be, to awaken and stand ready to become informed on what is doing outside of his immediate locality? Our own ranks contain members who are not entirely loyal to the old traditions of historic medicine. There are many who feel this trend toward change in practice, and, fearing that they are not abreast of the times, swing over toward the socializing theory, advocating plans and methods which are of foreign extraction, un-American in idea, and eventually demoralizing to those who are known as the "old guard" in the practice of the healing art.

There are some examples to which we must call your attention in order to prove our point: compulsory health insurance, a thing which was prominently before the people of the state of Pennsylvania for four years, and which at any moment may become revived and be an issue for us to consider; the problems of health centers, welfare work, community diagnostic clinics and a change in the method of administering to the ills of the people whereby a physician becomes a part of a machine, both to lessen the cost and produce so-called efficiency now being discussed in other states. The latest is the Sheppard-Towner Maternity Bill, which in its last modification as a law still contains much that does not leave us in the best frame of mind regarding the socialization of the profession by the government.

You no doubt will view this message purely in the light of a false alarm, and will ask if such conditions prevail, what is the remedy? In answer to the above question, we can only point to the most efficient means of combating unfair competition and control by applying the word "organization." If our medical fraternity can but realize these socializing efforts which are confronting us, not only in this but in every other state in the Union, there will be no effort too great in order that every eligible medical practitioner may be gathered together in organized effort, that they may understand the trend of the times and when called upon to express an opinion, it shall be done as with one voice, in place of a multiplicity of opinions so diversified as to be misleading to the average lay mind.

The divisions which have gradually come about in the practice of the healing art, by which cults and theorists have endeavored to wean away to themselves the favorable opinion of the public, are not for us to consider under this topic, and yet they have had an influence in creating a distrust in the minds of the public toward the old standards of medical practice. Our medical meetings should contain more that savors of the discussion of how to protect our own business and, in so doing, to protect the public, who have heretofore placed confidence in our sincerity and truth.

FROM CURE TO PREVENTION

President George E. Vincent[1] of the Rockefeller Foundation, has emphasized in a recent report the unwisdom of expecting too much from public officials who are placed in charge of the health problems of our communities. Knowledge about the causes of disease and its dissemination is one thing; cure of the afflicted and effective control of the spread of maladies is another. We may often be able to apply our hearts unto wisdom more successfully than we can make our activities and our environmental conditions subject to the dictates of the mind. Vincent has remarked that if all available knowledge about the causes of disease were actually applied the world over, millions of lives could be saved every year. But, he sagely adds, the thing is by no means so simple. The public authorities at best can control wholly or in part only about 20 per cent of the diseases by which people are crippled or killed. Typhoid, scarlet fever, smallpox and malaria can be either entirely prevented or kept from spreading; but tuberculosis, measles, diphtheria, pneumonia, influenza and many other maladies are either less perfectly understood or do not respond so readily to control efforts. As a consequence, the large residual group of menaces to human health and welfare must be attacked through the agencies of public education rather than official action. It does not follow that the sphere of usefulness of those medically trained is decreased because their experience cannot be brought to bear directly on disease; on the contrary, it emphasizes anew the importance of "shifting from cure to prevention." For the physician, the future has new responsibilities in store.—*Jour. A. M. A.*, Oct. 22, 1921.

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[1] Vincent, G. E.: The Rockefeller Foundation: A Review for 1920, The Program for 1921, New York, 1921.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—Henry Stewart, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—John W. Bancroft, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—J. Hayes Woolridge, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. j. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederck R. Bausch, M.D., Allentown.
Luzerne—Walter L. Lynn, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Fred Wade Paton, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—O. M. Weaver, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—Benjamin F. Hubley, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—W. Gilbert Tillman, M.D., Easton.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—John J. Repp, M.D., Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percy E. Whiffen, M.D., McClure.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Martin E. Herrmann, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Homer P. Prowitt, M.D., Washington.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—J. F. Trimble, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

February, 1922

ALLEGHENY—NOVEMBER

The regular monthly scientific meeting of the Allegheny County Medical Society was held on Tuesday, November 15, 1921, 8:30 p.m., at the Pittsburgh Free Dispensary Building, 43 Fernando Street, Pittsburgh, Pa.

SYMPOSIUM ON PREVENTION AND RELIEF OF HEART DISEASE

The symposium was opened up by Dr. James D. Heard, under the heading of *Cardiovascular Disease; a Public Health Problem.* That the prevention and treatment of heart disease is a public health problem of the first magnitude has been abundantly proved. This proof is readily available in special articles, many of which have appeared in medical journals. It is convincingly set forth in the numerous leaflets and reprints, the distribution of which forms part of the admirable program of publicity carried on by the Association for the Prevention and Relief of Heart Disease in New York City. Nevertheless, the point of view of those who have made a special study of this problem has not yet received general acceptance either by the profession or by the general public. Hence, reexamination of the subject has appeared advisable to your program committee, in order that this truth may no longer remain latent, but its acceptance be the basis of active endeavor on the part of members of this society.

Heart disease is a practical public health problem for the following reasons: (1) It is responsible for the greatest number of deaths. (2) During the life of the cardiac, periods of disability occur which constitute in the aggregate a vast economic problem. (3) Organic disease of the heart is very frequently preventable; heart disease, when present, results in a handicap which may be materially lessened by supervision and treatment. (4) Prevention and treatment of heart disease cannot be adequately handled by the individual; it requires the united efforts of clinicians, laboratory workers, special public health organizations and the general public.

Mortality. Heart disease has supplanted tuberculosis as the "captain of the men of death." Statistics show that tuberculosis is decreasing as a cause of death. On the other hand, deaths from diseases of the heart are increasing and now occupy first place on all mortality statistics. Of these, we will quote only the more recent. Thus, the Department of Commerce announces that the Census Bureau's report for 1920 will show that the death rate per 100,000 for chronic diseases of the heart increased within the registration area from 131.0 in 1919, to 141.9 in 1920. During the same period the rate for tuberculosis decreased from 125.6 to 114.2. Local statistics for the Pittsburgh area have been made available to me through the kindness of Dr. R. C. Burns, Director of the Department of Health, and of Mr. H. J. Armour, General Statistical Clerk in the Department of Vital Statistics, Department of Health. These statistics, as published in the daily press of November 4, 1921, show that heart disease is credited with the following yearly average of deaths per 100,000 population for the decade stated: 1873 to 1882, 58.9; 1911 to 1921, 140.4. "Disease of Heart and Circulation" during the same period: 68.8—159.9. "Bright's Disease" during the same period: 16.3—73.8. In each instance an increase is noted. On the other hand pulmonary tuberculosis was accredited with 216.9—105.2; "all forms of tuberculosis," 287.5—133.2.

It is obvious that the above classification does not lend itself to the purpose of this article, since, under "Diseases of the Heart and Circulation" are included such varying conditions as diseases of the lymphatic system and hemorrhoids. In view of this fact Mr. Armour has, at the request of Dr. Burns, very kindly reclassified his statistics with the following results: Cardiovascular disease heads the list of causes of death, with the single exception of pneumonia. The deaths from cardiovascular disease appear to be almost stationary when the figures for 1912 are compared with those of 1920. On the other hand, tuberculosis (all forms) shows a slight decrease, the number of deaths from the latter cause being approximately one-half of those from the former. The figures for 1912 and 1920, per 100,000 population, are as follows:

	1912	*1920*
Organic Heart Disease. Pericarditis. Endocarditis, Organic Diseases of the Heart, Angina Pectoris,	140.1— 8.8%	136.7— 8.4%
Apoplexy,	69.4— 4.36%	67.6— 4.15%
Diseases of the Arteries, Atheroma, Aneurism, etc.,	9.4— .59%	22.3— 1.3%
	218.9—13.75%	226.6—13.85%
Embolism and Thrombosis,	4.5— .28%	2.8— .17%
	223.4—14.03%	229.4—14.02%
Bright's Disease,	70.9 4.44%	73.9— 4.5%
Tuberculosis, all forms,	124.1 7.8%	119.4— 7.3%
Pneumonia,	261.1 –16.44%	380.5—23. %
Cancer,	65.6— 4.12%	86.7— 5.3%

In New York City 10,421 deaths occurred in 1919 which were attributed directly to organic heart disease, while tuberculosis was held responsible for but 7,396. The death rate from heart disease at the various age periods varies, but it is not low even in early life. In proof of this Lewis I. Dublin, statistician of the Metropolitan Life Insurance Company, of New York, has drawn the following striking comparisons: "The death rate from heart disease, under 28 years, is as high as that from typhoid fever; for the ages between 25 and 34 years, it is as high as that from lobar pneumonia; between 35 and 44 years it is higher than for any other cause of death."

Disability. It is impossible to assess with any degree of exactitude the enormous price which the community pays for its negligence in regard to prophylaxis and the proper handling of its cardiacs. The incidence of organic heart disease may be realized by consideration of the following facts: About 2,000,000 people in the United States have seriously impaired hearts; insurance companies reject 2 per cent of applicants on the ground of serious heart defects; one and one-half to two and one-half per cent of school children in the city of New York suffer from heart disease, it having been estimated that 20,000 such school children are seriously handicapped by permanently damaged hearts; it has been stated that a careful study of industrial workers would show that approximately 2 per cent have serious cardiac defects. The economic burden imposed upon the community through the disability arising out of diseases of the heart is very great.

The handling of cardiacs is, as St. Lawrence states, haphazard and possibly improper, the management being without plan and largely symptomatic. As a result the education of cardiac children is largely neglected, many lives are unnecessarily restricted to the point of uselessness, prophylaxis against reinfection is not applied. "Discharge and return home has been but the first phase of another cycle, and not infrequently the final cycle was early brought to a close." Among adults we find disability from heart disease most prevalent among the income producers, for it is at the age of greatest responsibility that a compensated myocardial or valvular lesion becomes uncompensated, that syphilis begins to manifest its destructive action on heart muscle and artery, that the various degenerative disorders become manifest. Many of these patients are never able to work at full capacity, periods of enforced rest occur with increasing frequency, and before death, the majority of cardiacs are totally dependent upon others for a period of weeks, months, or even years.

Prophylaxis and Treatment. It is fortunate that organic heart disease may frequently be prevented and that disability resulting from organic disease of the heart may be materially lessened through the exercise of efficient care. If neither of these propositions were true, heart disease would cease to interest us as a public health problem. Other speakers will present detailed consideration of the subjects of prophylaxis and treatment. Hence, it will be necessary for me to state only that it has been proved that heart disease may be largely prevented by measures such as the removal of septic foci, the efficient guarding against contagion, an early and adequate treatment of syphilis, and a readjustment of inadvisably conducted lives. In like manner a continued supervision of the cardiac, leading to the enforcement of such measures as may be indicated for the prevention of reinfection, the adjustment of the patient's life to his cardiac reserve, the treatment of the patient during periods of decompensation, all these and other measures will result in greatly diminishing the amount of suffering of the individual, the prolongation of life and activity, and the resultant lessening of economic burden upon the community.

Method of Attack. The first organized attempt to study and fight heart disease on broad lines, as carried on in New York City, has met with such success that the value of the method cannot be questioned. The most important factor in the success was the formation of an association, the objects of which are stated as follows: "To gather information on heart disease; to develop and apply measures that will prevent such disease; to seek and provide occupations for heart disease patients; to promote the establishment of special dispensary classes for such patients; to extend the opportunities for adequate care of cardiac convalescents; to urge the provision of permanent institutional care for such cardiac patients as are hopelessly incapacitated for self-support, and to encourage the establishment of associations with similar objects in other cities." It is obvious that such objects cannot be attained unless both the medical profession and the laity are fully aware of the magnitude of the problem, and unless both profession and laity are willing to expend a great deal of effort in an attempt to solve it. The tuberculosis problem has assumed national importance, vast amounts of money have been expended in an attempt to mitigate the tuberculosis evil, many clinicians and laboratory workers have trained themselves to a special efficiency in regard to questions of prophylaxis, early recognition of the disease, handling of the tuberculosis patient, and the like. Largely as a result of efficient and enthusiastic effort, the mortality from tuberculosis is steadily declining. The problem of organic heart disease is as great, or even greater than that of tuberculosis. The time has come for organized attack along this new front. It is believed that such an attack will result in a large measure of success. For this attack a beginning must be made. It would appear that the first step should be the organization of cardiac clinics in the various hospitals and dispensaries of the city. A close affiliation of these clinics would be as essential here as it was found to be in New York.

Dr. John W. Boyce, discussing the first phase of this problem, expressed his views as somewhat antagonistic towards a campaign of this type. As he feels that in the famous antituberculosis campaign the decrease of death from tuberculosis was a mere incident and not due to the efforts of the organization, as the death rate from tuberculosis was constantly decreasing long before the activities of the antituberculosis campaign were inaugurated. That the general practitioner should take care of the cardiopath was his advice.

Dr. O. M. Eakins took up "Life Insurance" as one of the special economic features.

Dr. Wm. O'N. Sherman in his presentation, "Industrial Insurance," related his experience resulting from a general course of survey at the Carnegie Steel Company, which included the examination of fifty thousand men and which resulted in finding a large number of cardiopaths. Of this total number only one man was discharged or had his duties changed as the result of this survey. Dr. Sherman believes that systematic examinations are of great deal of use and that they do meet with the approval of the public. He cited that one hundred officials of the above named company were examined by the life extension institute experts. The result of the examination was given to each individual with the request that he should consult his family physician, and that such corrections as the family physician deemed necessary should be carried out. One year after this examination these men were again consulted and every one was of the opinion that such procedure was not only desirable but helpful.

Prophylaxis of Heart Disease, by Dr. H. G. Schleiter was the next paper of the symposium. This phase of the problem comprises two factors: First, the prevention of infections which give rise to it, as heart disease is the direct result of some form of infection or reinfection. A presumptive relationship to cardiac disease comes from typhoid fever, diphtheria, scarlet fever, influenza, pneumonia, measles. The known and positive infections causing heart disease are rheumatic fever, chorea, infected teeth and tonsils, and syphilis. Prolonging convalescence, especially in rheumatic fever, the intelligent handling of infected teeth and tonsils, and the strenuous efforts exerted against syphilis were emphasized; also that systemic oversight and care of cardiac patients are necessary for the purpose of preventing reinfections, of protecting them from excessive strain, increasing their capacity for exertion and giving them a maximum of life and usefulness.

Dr. F. R. Billings, discussing Dr. Schleiter's paper, agreed with the principles outlined and urged that convalescence from acute infectious disease, especially in children, should be prolonged.

Organized Care of Cardiac Patients was presented by Dr. A. P. D'zmura. The magnitude of the problem demands a comprehensive plan of attacking it. The first requisite for success is the coöperation of the medical profession. Any plan which may be formulated should not interfere in any way with private practice. The work of the practitioner should be supplemented, not superseded. The general community should be informed in the proper way of the menace confronting us and should assist in procuring the necessary funds required to supply certain deficiencies in the various steps which could restore the majority of cardiacs as useful citizens. The energetic physician can always get help for any of his patients, in any branch of medicine or surgery, without charge, if necessary. It is only the self-satisfied man in the profession who thinks that he alone can handle any problem which presents itself. Patients having cardiac decompensation of any degree should be given the benefit of all the knowledge and skill available. To put into effect such a plan as has been outlined the formation of a Pittsburgh Association for the Prevention and Relief of Heart Disease is imperative. The association should not attempt to supplant the bed-rock of private practice. Every patient coming to any of the agencies of the association should come through his physician and every move in the subsequent course of the patient should be made with the knowledge and consent of the physician who referred him. Convalescent homes, trade schools and social workers are necessary to round out the proposed plan. The public have financed the antituberculosis campaign with signal success. They must be shown the necessity of supporting the proposed association because its need is greater at the present time. A nucleus for the work in Pittsburgh already exists at St. Francis Hospital, where the medical school has a cardiographic laboratory and where, with the coöperation of the hospital management, a cardiac dispensary has been organized. A similar dispensary is contemplated at the Passavant Hospital. Units could readily be formed in other hospitals pending the establishment of an association such as exists in New York.

Dr. A. H. Colwell agreed with the plan, in discussing Dr. D'zmura's paper.

In the general discussion Dr. Joseph Barach was very heartily in favor of the plan as he was familiar with it in the New York Association of Cardiac Clinics. Dr. Heard, discussing the question, felt the necessity of the problem. Dr. Schleiter, in closing the discussion spoke of the importance of the social service work gained in heart disease.

Dr. Joseph Barach presented a new disease syndrome, which may be entitled *"The Tonsil Thyroid Syndrome."* In 25 consecutive cases he showed that in the female, chronic tonsilar infection, existing over a period of 15 to 35 years, will be followed by a constitutional reaction which manifests itself in the clinical picture known as hypothyroidism. In most of the cases a colloid goiter was present, and in half of them it was disfiguring. All patients had enlarged, diseased tonsils. Generally this was associated with chronic pharyngitis. There was enlargement of the cervical lymphatic glands. There was a colloid goiter. In 16 cases the body weight was more than 20 pounds above normal. In 10 it was 60 to 100 pounds above normal. This obesity was believed to be due to suboxidation because the metabolism was missing in those cases in which the test was carried out. There was a tendency to drowsiness and some alteration in the psychology of the patient, such as is seen in hypothyroidism. There was a subnormal temperature, pulse rate and blood pressure. They complained of feeling cold more readily than the healthy members of their family. In stature they were all short and very heavy. The skin and hair were dry, nails brittle, there was a tendency to alopecia, the teeth were carious, the tongue thickened in some. Constipation was present. Many were no breakfast eaters; none of them were large eaters. In 5 out of 8 married women there was sterility. Menstruation was disturbed in almost all. There was excessive development of the breasts in more than half of these women and in all the sterile ones. The two oldest patients had a tendency to nephritis with asternal hypertension. A possible explanation of this syndrome may be found in the relationship between the iodine supply and the chronic infection. If chronic infection impoverishes or perverts the iodine in the organism and this leads to a colloid goiter, the result will be a state of hypothyroidism such as is herein described. Lester Hollander, Reporter.

ARMSTRONG—JANUARY

The annual meeting of the Armstrong County Medical Society was held in the Alexander Hotel, Kittanning, in January. After the regular order of business, the following officers were elcted for the ensuing year: President, Oren C. Campbell, Ford City; first vice president, Edward H. McClister, Kittanning; second vice president, Fred C. Monks, Kittanning; secretary-treasurer-reporter, Jay. B. F. Wyant, Kittanning; legislative committee, Thos. N. McKee, Kittanning, Joseph D. Orr, Leechburg, and Jesse E. Ambler, Ford City; district censor, Thos. N. McKee, Kittanning; program committee, F. C. Monks, Kittanning, E. H. McClister, Kittanning, Jay B. F. Wyant, Kittanning; censors, Samuel E. Ambrose, Rural Valley, J. D. Orr, Leechburg, Charles A. Rogers, Freeport, A. E. Bower, Ford City, A. J. Sedwick, Kittanning.

After the election of officers, the members were escorted to the dining room of the Alexander Hotel, where all enjoyed the annual dinner. The president-elect, introduced by the retiring president, was master of ceremonies. After a few well chosen words, he called upon the retiring president for his address. The title was "The Doctor." It was a most excellent address full of good things, pleasing as well as instructive and entertaining.

The society meets monthly, has been 100% in membership for several years, and promises to maintain this record for the ensuing year. The society endorses the State Journal and sends greetings to all of its readers, with the wish that each member may get a new member, until all eligible physicians are gathered in. J. B. F. Wyant, Reporter.

BRADFORD—DECEMBER

The regular monthly meeting of the Bradford County Medical Society was held at the Robert Packer Hospital, Sayre, December 13, with seventeen members and eleven visitors present.

The communication from the Bucks County Medical Society, advocating a propaganda for "a bill authorizing the establishing of intercounty tuberculosis hospitals" was referred to a committee, with instructions to report at the January meeting.

Robert A. Keilty, M.D., director of the Laboratories of the George F. Geisinger Memorial Hospital, Danville, Pa., was present by invitation, and favored the society with a paper on "Typhoid Fever; the Correlation of the Laboratory and the General Practitioner." The purpose of this paper is to call to the attention of the general practicing physician the important rôle which he may play in the complete control and eradication of typhoid fever and to point out the ways and means by which the laboratory may assist.

One often hears of either actual or supposedly different results arrived at by different laboratories along a given line, as the reading of blood serological reactions for syphilis. The result is that, if not discredit, at least suspicion is thrown upon laboratory work as a whole. The position, therefore, of the clinical laboratory to-day is a fundamental one, established in part upon the rocks of fact, upon which it rests with two feet squarely set, and in part upon the fabric of research, upon which it is spreading, getting here and there a firm foothold, extending and establishing facts, and widening its sphere of usefulness for diagnosis.

The finding of tubercle bacilli in a specimen of sputum establishes a case as one of active respiratory tuberculosis; a negative finding does not rule out tuberculosis by any means. On the other hand, the absence of Gram negative intracellular diplococci in pus from an acute purulent conjunctivitis rules out gonorrheal ophthalmia, while the presence of streptococci in culture from the same pus makes a diagnosis. A strongly positive blood serological reaction in an acute necrotic cellulitis of the nose, makes a diagnosis of syphilis which is absolutely secured by the demonstration of treponema pallidum; a negative finding of both pretty definitely rules out syphilis. An innocent-appearing, circumscribed nodule in a breast removed at operation, immediately prepared by frozen section and examined, may diagnose an early carcinoma with the possibility of a one stage radical operation and complete cure. The functional worth of the kidneys in a nephritic, the degree of toxicity in acidosis, the character of the endometrium following curretage, the potability of water, the percentage of solids and fats in breast milk, the type of metastasis in a lymph node, the type and group of a donor for transfusion, the type of pneumococcus in pneumonic consolidation, and the pathologico-clinical correlation of an autopsy are some of the many rocks of fact upon which the modern laboratory rests and upon which it is ever ready to assist with indisputable authority.

In conclusion, the laboratory can be of tremendous importance in a diagnostic way to the clinician, but it has limitations which must be thoroughly understood by both parties. The laboratory serves a double function, that of using known facts for diagnostic purposes and that of searching the unknown for new facts. The laboratory understanding of typhoid fever is one of the most complete chains which we possess. If the general practitioners and those charged with the guardianship of the health of our own communities will study it from the standpoint of prevention of infection, this disease will be completely eliminated from the lists. A widespread campaign of education is in order, for the purpose of bringing about clean water supplies, pasteurized milk and ice cream, clean foods, elimination of flies, isolation of carriers and last but not least, wholesale antityphoid vaccination among the civilian population, when typhoid will be relegated to a remembrance.

The reading of the paper was followed by a general discussion upon typhoid fever and the value of the laboratory as an aid in the diagnosis of various diseases. Dr. L. J. Osborne, Nichols, N. Y., who spent twenty-two months in the British Army during 1917 and 1918, in speaking of the value of antityphoid vaccination stated that he did not see a single case of typhoid fever during his service and only one case of paratyphoid. A rising vote of thanks was extended to Dr. Keilty for his excellent and practical paper.

C. L. Stevens, Reporter.

CHESTER—DECEMBER

One of the most enjoyable meetings of the Chester County Medical Society that has been held for many months was the December meeting at the West Chester Golf and Country Club, when the Society was entertained at dinner by the West Chester members. The feature of the dinner was the generous contribution of venison provided by Dr. Joseph T. Rothrock, who modestly disclaimed the honor of actually shooting the deer but expressed his hope that next year he would be more successful.

Following the dinner the members were addressed by Dr. W. Wellington Woodward on "Injuries of the Skull." Dr. Woodward gave a comprehensive outline of the most frequent injuries and their treatment, calling attention to recent advances in surgery of the head. He emphasized the importance of thorough examination and x-ray photographs in determining the extent of injuries however trivial. The value of lumbar puncture in all cases showing evidence of intracranial pressure was considered most important. Dr. Woodward cited a very interesting case of injury in which almost all of the scalp had been cut off, and had later been stitched on at the hospital with apparent success.

Following the meeting, a vote of thanks was extended to the West Chester members, and especially to Dr. Rothrock, for their hospitality.

Henry Pleasants, Jr., Reporter.

CLEARFIELD—DECEMBER-JANUARY

At the December meeting of the Clearfield County Medical Society a paper was read by Dr. J. W. Gordon on "Pelvimetry," and during the discussion a resolution was offered and adopted as follows: "Whereas, there is an immense amount of needless suffering, due to lacerations and infection, and unnumbered deaths which have resulted from the inefficient handling of confinement cases by unqualified practitioners, and especially ignorant midwives; therefore, be it resolved, that it is the sense of the Clearfield County Medical Society that a law should be enacted by the next legislature, forbidding any person except a regularly licensed Doctor of Medicine to accept the responsibility of conducting a case of labor, or to issue any certificate of birth." The secretary was instructed to present this to the Executive Secretary of the State Society, and to urge the coöperation of the other societies of the state by taking similar action.

At the January meeting of the Clearfield Society, which was held on the 11th, the following officers were elected for the year 1922: president, Dr. J. A. Miller; first vice president, Dr. W. C. Browne; second vice president, Dr. J. M. Cornely; secretary, Dr. J. M. Quigley; treasurer, Dr. W. O. Wilson; censor, Dr. H. A. Blair; editor and reporter, Dr. W. S. Piper.

J. M. Quigley, Reporter.

DAUPHIN—DECEMBER

On December 6, 1921, the meeting of the Dauphin County Medical Society was devoted to the study of cancer.

A clinical meeting was held at the Harrisburg Hospital in the afternoon, and the members had the pleasure of hearing Dr. Jos. C. Bloodgood from the Johns Hopkins University, and Dr. Eugene Pool of New York City, speak on this important subject, as well as demonstrate their ideas by presentation of a number of very interesting cases.

Dr. Geo. L. Laverty, of Harrisburg, was the chairman of the Committee on Arrangements, and he was very successful in getting together a large attendance and making the clinic feature a most interesting part of the meeting. Dinner was held at the Penn-Harris Hotel, at which time an opportunity was given for the various members to meet the noted speakers.

In the evening a public lecture was given at the Harrisburg Technical High School auditorium, which was well attended by both the medical profession and the public in general. At this meeting Dr. J. M. Wainwright, of Scranton, chairman of the Cancer Commission of the Medical Society of the State of Pennsylvania, spoke on the above subject and presented some very interesting lantern slides. Dr. Bloodgood likewise addressed the audience and illustrated his talk by special lantern slides. As the control of cancer is largely a question of education, it is hoped that these meetings will be an annual occasion, as by this means much valuable data is brought before, not only the Medical Society, but the laymen.

It is necessary to teach the public to consult reputable physicians as soon as a tumor is noticed, and to have removed all tumors that are likely to cause trouble in the future. Physicians must, therefore, increase their skill in identifying the type of growth, and advise patients intelligently as to what is the best treatment in connection with their particular case.

The meeting was a splendid success and a credit to the society. Frank F. D. Reckord, M.D., Reporter.

FRANKLIN—DECEMBER

The regular stated meeting was called to order at 2:15 p.m., in the grand jury room of the courthouse at Chambersburg, by Dr. J. W. Croft, vice president, in the absence of the president. The following members were present: Drs. Amberson, Bridgers, Coffman, Croft, Emmert, J. C. Gilland, Miley, Myers, Peters, Shull, Snively, Seaton, Swann and Thrush.

The minutes of the November meeting were read and declared adopted by the chairman. A letter from Dr. Jump was also read regarding a committee on cancer to coöperate with the committee of the State Society. Dr. Gordon moved that the incoming president appoint a committee of three to take up this work at the advice of the State Committee. This was seconded and carried. A letter from Dr. Van Sickle was read, regarding the coöperation of the members in profiting by the advertisements in the Journal.

The resignation of Dr. John H. Mayer, of the Baltimore & Ohio Railroad, was read and upon motion was accepted. Nomination of officers was made for the year 1922.

Dr. Coffman spoke of the portraits of early physicians of the county now in the meeting room and of the absence of the names of the persons represented. He moved that a committee of three, with Dr. Palmer as chairman, be named by the incoming president, to attach the names of the individuals to the portraits, and it was suggested to find a permanent place for their hanging. This motion was seconded and carried.

Respecting the annual meeting, Dr. John K. Gordon moved that the annual meeting be held at Hotel Washington, Chambersburg, at the regular meeting date in January. This motion was adopted. The Executive Committee was directed to make the arrangements.

Dr. Samuel D. Shull, Chambersburg, discussed fecal fistula and described a special case in his practice, in which he did an operation at the Chambersburg Hospital. He described the cause, the development and the operation for its repair. The subject was discussed by Drs. Snively, Seaton, Thrush and Gordon.

Dr. J. H. Swann, St. Thomas, was called and he discussed the round worm. He told of the condition often caused by worms and described a number of cases in his practice, several quite recent. He believes that the presence of worms should be carefully considered. Dr. Coffman described some cases in his practice in which seven symptoms or conditions had presented. He thinks round worms in the adult are usually more serious in their influence, and that the possibility of worms should be considered in many patients, especially those of a nervous character. Drs. Gilland, Amberson and Bridgers spoke of the untoward condition in the use of santonin in the treatment for worms. It was reasoned, however, that when the use of the drug was followed by an active cathartic, the possible danger would be prevented. Dr. Amberson believes that the presence of animal pets in the household is one source of the ovules of the worms gaining entrance into the child's alimentary canal either by water or food.

John J. Coffman, Reporter.

HUNTINGDON—JANUARY

The Huntingdon County Medical Society met at the Huntingdon Club, Huntingdon, Thursday, January 12th, at 2:30 p.m., with the president, Fred R. Hutchinson, in the chair, and the following members present: J. Roy St. Clair, C. A. R. McClain, C. C. Brumbaugh, F. L. Schum, R. R. Decker, C. R. Reiners, J. G. Koshland, G. G. Harman, F. L. Richards, I. S. Plymire, H. C. Frontz, J. S. Herkness and J. M. Keichline, Jr. There was a very good turnout, considering the condition of the roads and the irregular train service.

The treasurer's report, audited, was accepted. Dr. Frontz gave a talk on illegal practitioners, in reply to the finding of our censors. The condition is disheartening. Dr. Keichline read a paper on Diphtheria Immunity, in which he described the Schick test and its use in finding the susceptibles. He described the toxin-antitoxin and its use in providing immunity. He passed around the pamphlets and blanks used by the New York City Board of Health, which were sent him by Dr. Abraham Zingher. Of course he dwelt on the various reactions to the Schick test and the reaction of susceptibles of different ages to the toxin-antitoxin, so that his paper was complete. Dr. Reiners opened the discussion and gave the history of the development of the immunity, and the difficulties encountered in its perfection. Dr. McClain told of the diphtheria epidemic which they just passed through in Mt. Union and emphasized the number of school children who were carriers. Many interesting questions were asked and answered, and it was freely admitted that the laity should be instructed about the value of diphtheria immunity.

At our next meeting, February 9th, Dr. Brumbaugh will present a paper on the "Indications and Contraindications of Cæsarean Section," and as he has had considerable experience in this procedure we anticipate an excellent paper. J. M. Keichline, Jr., Reporter.

LANCASTER—DECEMBER

At the regular meeting of the Lancaster County Medical Society, Dr. Brook M. Anspach, Professor of Gynecology at the Jefferson Medical College, read a paper entitled "Disorders of Menstruation." The theory of menstruation is that the impulse is from the ovary and the response from the uterus. This impulse is clearly associated with secretions from the other internal glands as evidenced by hypertrophy of the thyroid during pregnancy. The acromegalous appearance of women early in pregnancy, with the increase of the anterior lobe of the pituitary gland are further proofs of the above statement.

Amenorrhea in women with hypofunction of the ovary is characterized by delayed, scanty, irregular and painful menstruation, and is due to a deficiency in the internal secretion. One type starts early in life, and another type late in life. The latter type is usually associated with sterility. The ideal treatment consists of dessicated anterior lobe of the thyroid and ovary, carefully given, combined with outdoor exercise and restrictions in the diet.

In cases of sterility, specimens from the husband should always be examined and spermatozoid particles are accepted as proof of the husband's health. Determine whether the closure of the fallopian tubes is a cause of sterility. A method of forcing a mixture of carbon dioxid and oxygen and finding a pneumoperitoneum by means of the x-ray was described, but not advised because of the risks encountered. If the cervix is subpatulous and the patient is sterile, the introduction of a Norris intrauterine stem is the treatment of choice. It can be sutured in position over two periods and then removed. If the ovary hyperfunctions and there is a hyperfunctioning of the associated glands with an enlarged uterus, and the patient is a young woman, profuse hemorrhage at her periods occur. Glandular therapy is of no benefit in this type of case, but radium in 25 mmg. doses for a four-hour period influences the capillaries of the endometrium without influencing the ovary. Too much bleeding at the menopause, in which malignancy and other pathological changes can be excluded, is best treated by digitaleïn and ergotin. Intestinal indigestion at the menopause is often an early symptom of cancer, in the author's experience. In the early toxemia of pregnancy, ovarian substance is indicated while corpus luteum is indicated in the nausea and vomiting of pregnancy. Walter D. Blankenship, Reporter.

LEHIGH—NOVEMBER-DECEMBER

The November meeting of the Lehigh County Medical Society was held at the Sacred Heart Hospital in Allentown and proved to be a great success. Dr. Barton Cook Hirst, Professor of Obstetrics at the University of Pennsylvania, gave a wonderful address in his usual pleasing and convincing manner, on lacerations and perineal repairs. His audience was made up of 101 of the physicians of Allentown and surrounding towns, demonstrating the eagerness of the physicians to attend the meetings, and the desire to hear something good. An elegant repast was served by the staff of the hospital, and the wee, small hours of the morning were close at hand before the party broke up. It was one of those old-time meetings. Many thanks to Dr. Hirst and the hospital for affording us such a good time. This meeting and the meeting held at the Homeopathic Hospital were the only hospital meetings that we had this year. With four hospitals in our midst we should have a meeting at each one every year. Such meetings make a good society, keep it good, and make its members better, stauncher, stronger, more friendly toward one another, and more active workers for the society and the profession.

Dr. Ralph Francis Merkel, of Allentown, was elected a member of the society.

The December meeting was held on December 13, 1921. One of the most prosperous years we have ever had is about to come to a close. We have increased our membership to 104—better than any other county in the state in percentage of increase. This meeting was a banner meeting in attendance and in spirit. The members who were on the program were conspicuous by their absence, and in the dilemma the "good Samaritan," Dr. Butz, appeared and gave us a talk on diphtheria and the recommendations of the State Department of Health. A very lively discussion arose and the subject was never so well discussed in every phase as it was at this meeting. The cancer meeting for the coming year was discussed and plans laid for same. A very warm spirit existed that old Lehigh should shine in that work this year. The uses and abuses of the City Bacteriological Laboratory were delved into very warmly, and the opinion expressed that the members are very fortunate in having such an institution at their disposal.

The committee on the annual banquet reported that the banquet would be held at the Antlers' Home, January 2, 1922, with the ladies present. An innovation planned was to the effect that the banquet would start at 5 o'clock, following the meeting, and not in the evening as heretofore. This action was taken chiefly for the out-of-town doctors so they might attend.

A very efficient corps of officers headed by Dr. Weida, of Emaus, was presented by the nominating committee. This committee consists of the ex-presidents of the society for the past five years. The system has worked out well, and it is hoped will be continued.

The A. M. A. emblem with the name of the society encircling it, was discussed and motion was made that the members procure the same.

Two new members were elected—Dr. Charles Reuben Fox and Dr. Harold E. Hersh. The name of Dr. Edwin Sartain Gault was presented to be acted upon at the next meeting.

The feeling of unrest still exists that we as yet do not possess our own home. The treasury is better financially than ever before. The ladies' auxiliary, a very efficient wheel in our machinery, is spurring us on, as they have notified us they have added another $500.00 to the fund, which has grown to $1,500 and over. The program committee reports a series of surprises in store for the coming year, and if 1922 is not the banner year and the society the banner society of the state, it will be because "somebody blundered."

The sick of our society in the future will be presented with a plant. It was requested that we report to the secretary, or the president, whenever we know of the illness of any member or members. The Sunshine Club will do the rest. In the past we have sent flowers to the dead, but in the future we expect to send them to the living and not to the dead.

The work of the chiropractor and the "hexen doctor" were again discussed and we hope the coming year will have some surprises in store for us. The milk problem, which to-day is equal to any in the state, was discussed, and it is due to the persistency of the profession that the high standard has been reached in Allentown. We have good milk and clean milk and hope to keep it so.

With fifty-six non-members eligible to the society, the motto set forth in our meeting was one a meeting and one for every extra meeting we have. We hardly think the incoming president will be satisfied with that number, as he has already asserted himself that we should not stop at anything less than 33⅓%.

F. R. Bausch, Reporter.

MERCER—ANNUAL MEETING

The Mercer County Medical Society held its annual banquet on the evening of January 5th at the Sharon Country Club, Sharon, and it proved to be a decided success. The affair was the largest of the kind in the history of the Mercer County physicians. Not only did the membership turn-out break all records, but the Lawrence County Society adjourned a stated meeting to attend, 21 strong, and there were also guests from Youngstown, Warren and Hubbard. During the excellent dinner the Harris Peerless Entertainers furnished a program, which brought frequent and deserved applause.

The main addresses of the evening were given by Dr. Harlan Page of Warren, O., whose subject was "The Fun of a Physician's Life"; Judge J. A. McLaughry, presiding judge of Mercer County, who discussed "The Doctor in Court," and Dr. John A. Lichty, noted Pittsburgh specialist, whose subject was "The Gall Bladder and Duct Diseases as they Appear to the Internist." The speakers were introduced by Dr. A. M. O'Brien of Sharon, president of the society, who made an admirable toastmaster.

Dr. Page related a group of stories, drawn from his own experiences with various cases during his thirty years of practice, and all of them brought smiles and laughter. There was a professional touch to each and also a decidedly human flavor, and he closed by saying that the physician who fails to appreciate the humor of things as he goes along loses the best tonic of life.

Judge McLaughry touched upon the serious side of things in discussing his subject, and he paid a high tribute to the integrity and ethics of the Mercer County profession by saying that no suit for malpractice had been brought before him since he was elected to the bench. He spoke of the doctor's usefulness to bench and bar in appearing as a witness giving expert testimony, and gave sound advice regarding the integrity of the profession in its relation to cases which came up in court.

Dr. Lichty, introduced by Dr. O'Brien as "one of the foremost internists in the country and a physician of highest ideals and ethics," injected considerable humor into the introduction to his scientific discussion of the subject assigned to him. He said that in his quarter of a century of practice in Pittsburgh he had frequently come in contact with Mercer County doctors and Mercer Countians of other professions as well. "There was always something to distinguish them," he said. "One could always tell them—but one could not tell them much." Dr. Lichty complimented Judge McLaughry upon the timeliness and excellence of his remarks and the tribute that the judge had paid to the profession as a whole. His discussion of his assigned subject was largely of a technical nature, and coming from an authority of his high standing it was listened to with rapt attention by his colleagues. It was a scholarly, analytic, and frank exposition and carried conviction because it was based upon the hundreds of cases that have come under his observation and care during a long period of research and study.

Informal discussion of Dr. Lichty's talk followed, in which Dr. George Kennedy of Sharon, Dr. C. D. Hauser of Youngstown, Dr. H. E. Zerner of New Castle, Dr. W. H. Bunn of Youngtsown, Dr. C. W. McElhaney of Greenville, Dr. Walker of Youngstown, Dr. A. P. Hyde of Sharon, Dr. J. R. Cooper and others, participated.

Arrangements for the affair were in the hands of Dr. A. M. O'Brien, president, and Dr. Edith MacBride, secretary of the Mercer County Society.

Edith MacBride, M.D., Reporter.

MONTGOMERY—JANUARY

The annual meeting of the Montgomery County Medical Society was held at the Montgomery Hospital, Norristown, January 4, 1922, with President C. F. Doran in the chair, and the following members present: Drs. R. Knipe, Doran, Hubley, Eisenberg, Bostock, Little, Drake, Simpson, Gotwals, McCracken, Atkinson, Yeakle, P. Lukens, J. Shelly, Roberts, Hurwitz, P. Corson, McKenzie, G. Lukens, Irwin, Wright, W. Miller, Hunsberger, Parker, Hartman, Fabbri, McLauhlin, Sherborn, G. Miller, Wolfe, Hassell, Garner, Brush, Watson and Buyers.

The following officers were elected: president, Geo. W. Miller; vice presidents, John Sherbon, Willis Read Roberts; recording and financial secretary, E. S. Buyers; corresponding secretary and reporter, John C. Simpson; treasurer, Wm. G. Miller; censors, Percy H. Corson, Wm. G. Miller, Geo. F. Hartman; district censor, Wm. McKenzie; delegates to State Society, J. N. Hunsberger, H. A. Bostock; alternate delegates, John G. Wilson, J. Elmer Gotwals, W. J. Wright, Albert R. Garner; registration committee, J. C. Simpson, H. A. Bostock.

Dr. Robert W. Randall of Royersford, was unanimously elected to membership.

A committee was appointed to arrange for a banquet or smoker as they saw fit for the near future.

John C. Simpson, M.D., Reporter.

PHILADELPHIA—DECEMBER

The president, Dr. George Morris Piersol, in the chair.

SYMPOSIUM ON ALCOHOL

The Narcotic Situation in China: The Part the U. S. A. is Playing in the Opium Traffic, was presented by Dr. Lloyd R. Craighill, of Nanchang, China (by invitation).

Dr. Craighill began his paper by recalling accounts of some years ago when Great Britain made a practice of forcing opium upon China. This was superseded by the more insidious evil of sending morphine in its place. In 1912, at the Hague Conference, the great powers formed an agreement to stop the importation into China of opium and other narcotics and it is quite significant that following that convention there was a marked increase of opium importation into Japan. Before 1912 Japan averaged 30,000 ounces of these drugs per year, while in 1917 the figures read 600,000 ounces. This was not used in Japan; she manufactured all she could use. It was smuggled into China.

Several foreign nations, including Japan, have post offices in China, and through these, drugs may be passed to the provinces, while the law of China, requiring foreigners to be tried by the law of their own land, made it easy for Japanese peddlers when apprehended to go free.

In 1917, Great Britain, learning of the traffic of her citizens in opium for China, passed a law restricting its export and requiring a license. Trade with Japan accordingly fell off, but figures from the *Journal of the American Pharmaceutical Association* of August, 1920, give the following significant facts concerning the importation of crude opium into the United States: 1917, 124,764 lb.; 1918, 160,671 lb.; 1919, 730,000 lb. Dr. Royal S. Copeland, of New York, estimates that the legitimate use of crude opium in this country is 25,000 pounds per year. Of the 700,000 pounds remaining, there is good evidence that a large part finds its way into China. From Seattle alone, from July 1 to December 1, 1919, 550,000,000 doses of opiates were shipped to China—more than enough for one dose to every one of the 400,000,000 men, women and children of that great country.

A newspaper in China, in a special edition dealing with the morphine situation there, published a reproduction of original packages, from which display it was readily seen that America is having her part in illicit trade in China.

None of the statistics quoted deal with the traffic after 1920. A few days ago Dr. Craighill received evidence that a manufacturing chemist of the United States had tripled the output of his plant in narcotics, and this would hardly have been possible but for trade with the Orient.

Just now there is a bill before the U. S. Congress, "the Miller Bill," the purpose of which is to regulate importation and exportation of opium and narcotics into and out of this country. As Americans we want to wipe the blot from our good name in China, and this we can do by stopping this illicit opium trade.

Some Considerations of Pharmacology and Therapeutic Value of Alcohol

Dr. George B. Wallace, of Bellevue Hospital, N. Y., read this paper. In it he said that the tides of favor and disfavor regarding alcohol come and go and just now the latter prevails. Conflicting statements and variations in conditions under which experiments have been carried out make a true evaluation of the drug difficult. A consideration of the entire field was impossible, so the matter was taken up in the three phases of its effect: 1, on the alimentary tract; 2, on nutrition; 3, on circulation. The central nervous system was not taken up, since it was the theme of a succeeding paper.

Conclusions should be drawn upon the effect of therapeutic doses. In considering the alimentary effects, the effect on both appetite and digestion must be observed. Appetite is distinct from hunger and so many factors are involved in its production that it is hard to relate it to any single agency. It is common knowledge, however, that in some alcohol promotes, and in others prevents appetite.

Taking up its action on gastric secretion and digestion, Chittenden, Mendel and Jackson found that when placed in the empty stomach of dogs there was a marked increase of gastric juice. Another series of experiments, in which alcohol was given through a gastric fistula and the progress of digestion was judged by the proportion of undissolved meat, show quite plainly that alcohol does not affect materially the rate of digestion. In man its effect on gastric secretion may be one of retardation, nil, or may cause an acceleration of production, varying with the individual. The work of Magnus Levy and others along the line of metabolism proves that alcohol does not influence the utilization of food.

In summary, alcohol in proper doses may be a definite stimulant. There is no evidence that it improves digestion or affects it unfavorably.

Upon its nutritive value all experiments agree. Atwater and Benedict, in studies with the respiration calorimeter, find that not more than 2% of ingested alcohol is given off unoxidized, that is, the coefficient of availability of alcohol is 98%. Food digestion and absorption are not affected unfavorably. There is no increase of heat. The energy, at first potential, becomes kinetic and is transformed into heat, muscular work or both. It can replace isodynamic fats and carbohydrates. It protects the body proteins, but not to so great a degree as do the ordinary nutrients, and it is three days before protein protection develops in the normal individual. Beebee, in experimenting on its bearing on metabolism, found that with moderate amounts of alcohol there is an increase in the excretion of exogenous uric acid, due to a toxic effect on the liver. Hunt, in work on mice, says that alcohol increases the susceptibility to the acetonitro molecules, increasing the power of oxidation, and concludes that this action is detrimental. Atwater and Benedict hold that an increase in uric acid output and oxidation in the body need not be considered deleterious. Studies made upon alcoholized animals infected with streptococci, staphylococcus aureus, pneumococci, anthrax and tubercle bacilli, showed that in every case, with the exception of those infected with staphylococcus aureus, the mortality was greater in the alcoholized animals than in those to whom the drug had not been given. However, the application of these findings to man is a different matter, nor is there any evidence to prove that alcohol lessens resistance in him. Abraham Jacoby even states that patients may die if not given alcohol, and if it is given in sepsis they recover.

In summary: alcohol has definite value as a food, when given in amounts not excessive.

The effect on the circulation: Experiments on animals with intact circulation show no effect on pulse or blood pressure when alcohol is administered, and the cardiac contractions show slight but inconstant variation. Lieb and Cabot found the same result in man. Therefore alcohol cannot be called a direct circulatory stimulant. One effect that it has is the dilation of the peripheral blood vessels, aiding in the redistribution of the blood. Thus it may have a definite value.

In summary: There is no evidence of direct stimulation to the circulation. As a food, and in the redistribution of the blood it may be of use in disease.

Opinion as to clinical value varies, but there are two instances in which it is of therapeutic value: 1, in typhoid, as a food (although enforced administration should not be the procedure); 2, in some circulatory diseases such as angina pectoris, where it aids by action on the cerebrum and by redistributing the blood. There are good reasons to conclude that it has a value in therapeutics.

At the close of his paper Dr. Wallace greatly deplored the present tendency on the part of the public to attempt to restrict the drugs which a physician may use, urging that a physician should not be hampered in the management of a case in any way, so long as he acts to the best of his ability and judgment. Restriction should be actively combated.

In discussion, Dr. Alfred N. Richards stated that alcohol, by increasing the nutrition of the heart, may support it and act as a food, thereby acting as a stimulant. In a series of experiments he found signs of stimulant action on the heart in animals to which alcohol was given. In repeating these studies the same proportion of successful results was not obtained. He trusts that with the help of clinicians advance may be made in the study of the effects of this drug.

Dr. Henry C. Bazett pointed out the inadvisability of withdrawing alcohol from those accustomed to it during an illness, but raised the question as to whether or not a person is more benefited when ill if not previously in the habit of taking it. As a food undoubtedly it has value, and the psychical effects produced often are advantageous, although whether the disadvantages overbalance the benefits is a question. As prohibition decreases the habit it will be required less and less.

Other discussion brought out again the assertion that a physician should not be restricted in the use of this more than of any other drug. If quacks abuse their powers they should be dealt with, but the physician must be free to use his best judgment. The value of light wines as stomachics was stressed and the action of Burgundy in corpuscular stimulation and in the increasing of hemoglobin was highly recommended. It was also suggested that alcohol may be administered in such form that it will not create a habit, and at the same time be of therapeutic benefit.

The Effect of Alcohol on the Central Nervous System

Dr. Daniel J. McCarthy opened his paper by saying that alcohol has been blamed for many sins. Without its withdrawal the Russian revolution never could have been, while only by its presence could the free Irish Republic ever hope to be.

There are two considerations which must be dwelt upon in this discussion: 1, the pathological effects on the central nervous system as shown at autopsy; 2, experimental effects. There is a difference in effect upon the constant user and on the injected guinea pig. The human has always been subjected to the effects of alcohol, which makes the situation entirely different from that of a protoplasm, free from alcohol, hereditary and otherwise. A review of the literature shows a pre-bias against the use of alcohol and most of the experimental evidence can be cast aside. There is a disproportion between the clinical pathology and the pathology found at autopsy. Necropsy, after maximum effect of a large dose on an inexperienced person, shows edema of the cortex, congestion of the meninges and cortex, and microscopic examination shows an occasional ganglion cell in the fourth or fifth layer of the cortex that has undergone chromotolysis, from which condition it undoubtedly would have recovered had the patient lived another 48 to 72 hours. It cannot be demonstrated that death was due to cortical change. In the subacute alcoholic group there is accentuation of the above-described condition. In chronic alcoholism the picture is entirely different, as in these cases the effects of infection and visceral changes, such as arteriosclerosis, cirrhosis of the liver, etc., must be taken into consideration. The following changes occur: 1, marked brain atrophy (not as great as in paresis and long-standing tuberculosis), due to degeneration of ganglion cells of the fifth layer; 2, secondary sclerotic cortical change; 3, moderate to marked thickening of the meninges; 4, chronic edema of the meninges; 5, hydrocephalus; 6, changes in the spinal cord; 7, acute central neuritis. On examination the brain does not differ essentially from arteriosclerosis due to other causes, and in view of the numerous other body factors the findings are hard to evaluate.

Experimental work yields pathology corresponding to the above, and Brown in a monograph describes the process as: 1, toxic condition in the cortex; 2, secondary vascular changes. Other observers reverse this order. Pachymeningitis, inflammation of the dura with hemorrhage, occurs equally in paresis and tuberculosis, and may be attributed to trauma in arteriosclerotic vessels. In the spinal cord the vascular changes are more important. The conducting paths tend to degenerate in isolated columns, and there is a protrusion of the thickened pia into cord, bringing about a degeneration of the posterior and lateral columns. The anterior group is involved more by the arteriosclerosis process. Peripheral neuritis is a common symptom but is probably due to intoxication from organs whose function has been disturbed. Syphilis is a frequent factor, as are also infections of the throat. If the Wassermann of the blood or spinal fluid is positive the evidence is good; if it is negative it means nothing. If involvement of the spinal cord, cranial nerves and sphincters is present, it is well to look for a cause other than alcohol. Mercury and the iodides are of value in alcoholic neuritis, notwithstanding the Wassermann. Mixed factors should be considered in every case; endocrin affections are important in alcoholism.

There is an "alcoholic demand group" who show marked dipsomania and a low blood pressure. These people get along well until some mental stress occurs, when the central nervous system demands stimulus, and there is a fatigue depression and a debauch. Then there will be no demand until the next exhaustion. Such patients must be treated by insuring avoidance of fatigue, rest, coffee, strychnine, as needed, and moral reinforcement.

In conclusion, Dr. McCarthy acknowledged that at present there is no satisfactory solution of the whole subject.

In discussion, Dr. Charles W. Burr brought up the question as to why people care to drink to drunkenness. He names two types, the superficially bright boy without inhibition, who between 18 and 22 years takes to alcohol, and the asocial boy who in solitude drinks himself to death. He says that whether there is prohibition or not these people will continue so to do, and he wonders, aside from the fact that they frequently pull down people who would be of much use in the world, whether or not it would be better to let them drink all they can rather than to try to protect those whom nature is trying to get rid of. The way to deal with the question of prohibition is not by constitutional amendment or by state law but by a general feeling of people to live healthy lives and to do healthy things. Mary A. Hipple, Reporter.

SUSQUEHANNA—JANUARY

The Susquehanna County Medical Society held its annual meeting in the Public Library at Montrose, on Tuesday, January the 10th. The meeting was called to order by President A. J. Denman of Susquehanna. After the regular routine business the scientific program was taken up.

The first paper was one on "Industrial Surgery," by Doctor Catterson of Montrose. His paper dealt with personal experiences in industrial work while serving in an ammunition factory during the war. He spoke of the excellent results from treatment of burns, by using a 5% solution of cocaine in tragacanth. The next was a report of a case by Dr. Birchard of Montrose. This was a case of influenza in a girl of thirteen years, with unusual skin and mucous membrane complications. The next paper was one by Dr. Frye of Rush, on "Fractures of the Femur in Children." The patient had the advantages of the suspension method, which extended both limbs and held them in suspension by elastic cords that lifted the buttocks one-half inch above the mattress. The elastic suspension which takes the place of the weight and pulley suspension was original with Dr. Frye. This paper was discussed at length by the members of the society.

The following officers were elected for the ensuing year: president, Dr. A. E. Snyder of Montrose; vice president, Dr. D. J. Peck of Susquehanna; secretary and treasurer, Dr. E. R. Gardner of Montrose; censor for three years, Dr. A. J. Denman of Susquehanna; district censor, Dr. W. J. Condon of Susquehanna; committee on public health and legislation, Dr. E. R. Gardner of Montrose and Dr. D. J. Peck of Susquehanna; reporter, Dr. H. D. Washburn of Susquehanna. H. D. Washburn, Reporter.

WARREN—JANUARY

The regular meeting of the Warren County Society was held in the Elks' Parlors on January 16th, with 21 members present, or forty-three per cent of the total membership. A very fine dinner was arranged by the banquet committee, Drs. Stewart and Africa, and was thoroughly enjoyed even by those who have been on a strict diet.

After the dinner the nominating committee made their report, which was accepted without change. The officers elected were as follows: president, W. M. Baker; first vice president, Ralph H. Knapp; second vice president, I. J. Hyer; secretary and treasurer, Elizabeth S. Beatty; censors, R. B. Stewart, C. J. Frantz, Roy L. Young; library committee, W. M. Robertson, M. V. Ball, P. G. Weston; district censor, O. S. Brown; reporter, M. V. Ball; program committee, M. T. Smith, M. V. Ball and C. H. VerMilyea.

Dr. Young, the retiring president, urged the members to increase the attendance and thanked them for their coöperation in the past. Dr. Briggs gave the financial report, which showed a small balance in the treasury after meeting several unusual expense items. A vote of thanks was tendered to the retiring officers. The society held a meeting every month during the past year with the attendance very good, and the program was adhered to with but one or two exceptions. The program committee announced an attractive program for the coming year. Dr. Mitchell made a few remarks concerning the new Bureau of Welfare and urged the members as individuals to get behind it and give it their support. M. V. Ball, Reporter.

WYOMING—DECEMBER

The Wyoming County Medical Society met at the office of Dr. H. L. McKown, Tunkhannock, on December 27, 1921, for their annual meeting. The minutes of the previous meeting were read and approved, followed by the reading and discussion of correspondence.

The following officers were elected for the year 1922: president, Dr. V. C. Decker, Nicholson; vice president, Dr. G. M. Harrison, Meshoppen; secretary and treasurer, Dr. H. L. McKown, Tunkhannock; censors, Dr. W. W. Lazarus, Tunkhannock, and Dr. W. B. Beaumont, Laceyville; committee on public policy and legislation, Dr. Geo. M. Kinner, Mehoopany, and Dr. Geo. H. Rauch, Noxen; delegate, Dr. W. W. Lazarus, Tunkhannock; alternate, Dr. W. B. Beaumont, Laceyville.

A contribution of one dollar per member was ordered to be sent to the Medical Legislative Conference, Dr. Geo. A. Knowles, treasurer, Philadelphia.

Dr. Donald Guthrie, of Sayre, trustee of the State Society, was present and gave a very good talk on what the Cancer Commission of this state is doing. He says cancer is on the increase and kills during the most productive period of life, and is more noticeable in the well-to-do and educated people than any other class of society. He also stated that cancer is not contagious, nor is it a hereditary disease. Dr. Guthrie further stated that it is not a disgrace to have cancer and that nearly all operative cases are free from pain. Seventy-five per cent of all cancers can be prevented by early surgery.

The following members were present: Drs. Decker, Beaumont, Lazarus, Kinner, Rauch, McKown and Austin. Dr. T. Oliver Williams, a new resident of Tunkhannock, was a visitor as well as Dr. Donald Guthrie, of Sayre. Dr. Williams has made application to the Susquehanna County Medical Society for a transfer to the Wyoming County Medical Society. Almost all members have paid their dues for 1922.

H. L. McKown, Secretary.

STATE NEWS ITEMS

DEATHS

Dr. John C. Henry, East Stroudsburg, graduate of Jefferson Medical College, 1885, died December 21, aged 64 years.

Dr. Milton U. Gerhart, Lancaster, graduate of the University of Pennsylvania School of Medicine, 1877, died January 11th, aged 71 years.

Dr. Samuel C. Falls, Philadelphia, died December 26th. Dr. Falls was born in 1872, and was a graduate of Medico-Chirurgical College of Philadelphia, 1893.

Mrs. William R. Stavely, widow of the late Dr. Stavely, long a resident of Lahaska, died October 29th, in her 86th year. Dr. Stavely died some years ago. She leaves four children, three daughters residing in Lahaska, and a son, Dr. Livingston Stavely, of Washington, D. C.

Dr. Ralph E. Fulton, of Mount Pleasant, graduate of the Jefferson Medical College, 1869, died during the latter part of December, aged 74, after an illness of some months. Following Christmas the doctor's wife was taken ill with pneumonia and died a few hours after the Doctor's death, not knowing that her husband had died. Mrs. Fulton was 77 years of age.

Dr. George Erety Shoemaker, Philadelphia, died January 5th. Dr. Shoemaker was a graduate of the University of Pennsylvania School of Medicine, 1882, and a member of the following societies: Philadelphia Academy of Surgery, Obstetrical Society of Philadelphia, American College of Surgeons, Philadelphia County Medical Society, Medical Society of the State of Pennsylvania, and the American Medical Association.

Dr. Henry L. Thomas, Langhorne, died in a Philadelphia hospital while undergoing an operation, Sunday morning, December 25th, after an illness of only a few days. Dr. Thomas was born in Philadelphia in 1870. He was a graduate of the Jefferson Medical College, class of 1893, and located in Langhorne immediately after graduating. He joined the Bucks County Medical Society in 1897. He is survived by his wife and one son.

Dr. William Henry Rodgers, aged 43 years, died January 13th, at his home in Pittsburgh, after a residence of 18 years in that city. Dr. Rodgers was born in Philadelphia and graduated from the Jefferson Medical College. He was a member of the Allegheny County Medical Society, a veteran of the Spanish-American War, and a thirty-second degree Mason. He is survived by his widow, Mrs. Emilie Robson Rodgers, a son, William Henry Rodgers, Jr., and a daughter, Miss Emilie Jane Rodgers.

ITEMS

Dr. James Hutchinson, of Philadelphia, is enjoying a two months' trip abroad.

Dr. Galen D. Castlebury, of Williamsport, has recovered from an attack of scarlet fever.

Dr. E. U. Snyder, of New Castle, has returned from Philadelphia, where he took a postgraduate course.

Dr. and Mrs. William J. Wilkinson, of Sellersville, are spending several months at St. Petersburg, Florida.

Dr. Charles H. Miner, of Wilkes-Barre, who is connected with the State Department of Health, is seriously ill.

Dr. and Mrs. L. Webster Fox have returned to their home in Philadelphia after spending a few weeks in Port Sewell, Florida.

At a recent meeting of the Board of Directors of the Williamsport Hospital Dr. J. Gibson Logue was elected to the staff, and will serve on the Children's Ward and Contagious Ward. He will alternate every six months with Dr. Robert K. Rewalt.

Dr. C. Lincoln Furbush, Director of the Department of Public Health, has announced the appointment of Dr. Joseph C. Doane, of Philadelphia, as Medical Director and Superintendent of the Bureau of Hospitals and of the Philadelphia General Hospital.

Dr. Fairfax G. Wright, of Chambersburg, and Miss Ida A. Gillis, of New Brunswick, Canada, former head nurse at the Chambersburg Hospital, were married on December 27th, in the Market Square Presbyterian church of Harrisburg, by the Rev. Edward G. Hawes.

Dr. Carey J. Vaux, of Pittsburgh, has been appointed Director of the Department of Health in that city. Dr. Vaux, who is also president of the Allegheny County Medical Society, through his military experience is admirably fitted for the work in which he is now engaged, and is assured the hearty support of the society to which he belongs.

The various departments of the Mulford pharmaceutical laboratories are gradually being transferred to the Mulford Building at Broad and Wallace Streets, Philadelphia, where the general offices and stock rooms have been located for some time. Within the next few months, it is planned that all the pharmaceutical and executive activities shall be conducted under one roof, with the operation of the biological work at the Glenolden Laboratories as a separate unit.

The Philadelphia Pediatric Society recently held a meeting in Thompson Hall of the College of Physicians, Philadelphia, which was of vital interest to all physicians and everyone interested in nutritional work among children. The Society was able to secure Dr. Clemens Pirquet, Professor of Pediatrics at the University of Vienna, who talked about the work of the American Relief Administration in Austria. Dr. Pirquet also discussed his "New System" of nutrition, which is a subject that has aroused considerable discussion lately.

Dr. W. J. McGregor, of Wilkinsburg, a member of the Allegheny County Medical Society, entered upon his duties as coroner of Allegheny County, January 3, 1922. This is probably the first instance of a physician-incumbent of this office in the history of Allegheny County. Dr. McGregor was also an active participant in the late hostilities overseas, where he suffered severe injuries. One of the pleasant features of his election was the practically unanimous support of his candidacy by his fellow members of the Allegheny County Medical Society.

The Hospital Association of Philadelphia and the Philadelphia League of Nursing Education appointed a joint committee to make plans for a school for the teaching of Preliminary Courses in Nursing Education in Philadelphia. The plan submitted provides for the following:

That the school be sponsored by the University of Pennsylvania; that it be financed by the above-named associations; that its object be the teaching in one place the preliminary course in nursing education, now being taught in fifty separate training schools in Philadelphia and vicinity; that the curriculum as prepared by the National League of Nursing Education be adopted; that the subjects be taught by qualified instructors now teaching in the Philadelphia Training Schools for Nurses.

The committee recommends that this plan be put into effect February 1, 1922, and if successful, that it be continued for those students entering the training schools in September.

It is hoped that all hospitals will accept this opportunity to give the same preliminary course of instruction to their students, understanding, of course, that it is only an experiment.

The annual Pennsylvania tuberculosis conference, under the auspices of the Pennsylvania Tuberculosis Society, was held at the Penn-Harris Hotel, in Harrisburg, on January 24, 25 and 26. This conference also included the annual meeting of the Pennsylvania Tuberculosis Society.

Among the subjects presented at the several sessions were: "An Adequate Tuberculosis Program," "Health Education in Pennsylvania Schools," "The United Fight Against Tuberculosis," "County Tuberculosis Hospitals" and "Tuberculosis Prevention in Industry."

The speakers included Governor Sproul; Dr. Allen K. Krause, of Johns Hopkins Hospital, Baltimore; Dr. Edward Martin, State Commissioner of Health; Dr. James Alexander Miller, President of the National Tuberculosis Association; Dr. Charles J. Hatfield, Managing Director of the National Tuberculosis Association; Dr. George Thomas Palmer, President of the Illinois Tuberculosis Association; Dr. Stanley L. Wang, of the New York State Tuberculosis and Public Health Committee; Dr. Clifford B. Connelley, Commissioner of the State Department of Labor and Industry; Dr. Charles H. Keene, Director of Health Education in the State Department of Education, and Drs. Elmer H. Funk, H. R. M. Landis, Thomas McCrae, M. R. Taylor and Frank A. Craig, all of Philadelphia.

On Thursday evening, January 12th, a lecture was given on "The Truth About Vivisection," in Witherspoon Hall, Philadelphia, by Ernest Harold Baynes, the well-known naturalist and animal and bird lover. This lecture was given under the auspices of the Philadelphia County Medical Society, the College of Physicians of Philadelphia, the Philadelphia Academy of Natural Sciences, the American Philosophical Society, the Pennsylvania Society for the Protection of Scientific Research and the Medical Society of the State of Pennsylvania. The occasion for telling old truths over again lay in the danger of the pernicious activities of the antivivisectionists, and their underhand and untruthful campaign. Recently, Sir Frederick Treves, Dr. Wm. J. Mayo and other leaders of surgical and medical thought were quoted by the Antivivisection Society in such ways as willfully to mislead the public into the belief that such men were opposed to animal experimentation, and denied the great good that resulted to humanity from it.

Mr. Baynes projected letters on a screen containing unqualified denials of statements of any such belief on the part of these eminent men, and gave their views, showing very positively the necessity for animal experiment work.

The lecturer also quoted some of our great neurologists, who placed the leaders of the Antivivisection Societies in the pathologic class of zoöphiles, who love animals more than human beings; and indeed one of our prominent neurologists of Philadelphia recently told the writer of a woman patient of his who in deliberate language and not in the heat of argument stated it as her opinion that it was better to let babies die of diphtheria than that a dog should suffer in the discovery of a cure!

Mr. Baynes made an interesting point that animal experimentation has succeeded in mitigating the death and sufferings of animals, as well as in saving the lives and health of human beings. Support given these Antivivisection Societies may therefore add to the sufferings of animals as well as of human beings, and it should be so understood by the public. This fact should influence the zoöphile, for, if running true to form, he would scarcely be willing to allow an animal to suffer, even though such suffering might be compensated for to some degree by the suffering of the mere human being.

Among the names of "eminent" medical men, represented by the antivivisectionists as maintaining the uselessness of vivisection is that of a doctor who has "achieved wonders." Mr. Baynes threw on the screen a photograph of his application for a license. In this sworn statement he appears to have been born in 1899 and in 1915 to have attained to 26 years of age. He was able also to graduate as a Chiropractor in May and to have matriculated in the following September! His testimony, therefore, is obviously of unusual value, as pointed out by Dr. W. W. Keen!

It behooves the profession to keep alive the real danger to the public welfare of these misguided and unbalanced people who are backed by large sums of money given either by similarly disordered people or by those who do not know the truth.

J. Norman Henry,
Chairman Scientific Program Committee,
Philadelphia County Medical Society.

GENERAL NEWS ITEMS

The McIntosh Battery and Optical Company, Chicago, one of the oldest and best known manufacturers of x-ray, electromedical and physical therapy apparatus in the United States, has been reorganized with an increase of capital stock, under the name of the McIntosh Electrical Corporation. Distributing agencies have been established in almost every state in the Union, in the hands of thoroughly competent local men.

On Friday evening, January 6th, Dr. Alfred S. Burdick, President of The Abbott Laboratories, Chicago, delivered an address before the Chicago Branch of the American Pharmaceutical Association, on the "Newer Medicinal Chemicals." The rapid growth of American chemistry through coöperation of all research agencies in this country, was emphasized by the speaker.

Concrete examples of American achievements in synthetic chemistry were recited, and a plea made for the support of the medical and pharmaceutical professions to preclude the possibility of our again becoming dependent upon foreign sources for chemical supplies. The history of a number of synthetic medicinal chemicals was outlined. Announcement was also made of a number of new chemical bodies recently developed, and others on which research work was now being done by the Rockefeller Foundation, various universities, the American Medical Association, the Abbott Laboratories, and others.

In conclusion, Dr. Burdick urged both physicians and pharmacists to prescribe and dispense medicinal chemicals by the newer American names, rather than to perpetuate the pre-war dominance of foreign synthetics. This position was supported by the Council on Pharmacy and Chemistry of the American Medical Association, in whose laboratories American medicinal products have been analyzed and found to be equal and in some respects superior to foreign-made products.

The St. Louis Meeting of the American Medical Association.—The May meeting of the American Medical Association at St. Louis promises well toward being the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the Journal of the Association in December, inquiries and reservations are being made daily. The hotels and the Conventions Bureau are aiding the committee in a most satisfactory and helpful way to see that the fellows are comfortably housed and accommodated. The A. M. A. meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible a good fellow should double up so that no one is left without comfortable lodging.

Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way, write to Doctor Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis, Mo.

St. Louis' leading hotels (all European plan), their location and rates:

American (275 rooms), Seventh and Market Sts., $2.50-$6.00 (Diseases of Children).

American Annex (225 rooms), Sixth and Market Sts., $2.00-$6.00 (Pathology and Physiology, Pharmacology and Therapeutics).

Beers (114 rooms), Grand and Olive Sts., $1.50-$3.50.

Brevort (50 rooms), Fourth and Pine Sts., $2.00-$3.00.

Claridge (350 rooms), Eighteenth and Locust Sts., $2.50-$10.00 (Obstetrics, Gynecology and Abdominal Surgery).

Hamilton (160 rooms), Hamilton and Maple Sts., $2.00-$4.00.

Jefferson (400 rooms), Twelfth and Locust Sts., $2.50-$10.00 (Surgery, General and Abdominal, Orthopedic Surgery).

Laclede Hotel (265 rooms), Sixth and Chestnut Sts., $1.50-$4.00.

Majestic (200 rooms), Eleventh and Pine St., $2.50-$4.00 (Dermatology and Syphilology, Nervous and Mental Diseases).

Marion Roe (200 rooms), Broadway and Pine Sts., $1.50-$4.00.

Marquette (400 rooms), Eighteenth and Washington Sts., $2.00-$6.00 (Laryngology, Otology and Rhinology).

Maryland (240 rooms), Ninth and Pine Sts., $2.00-$5.00 (Gastro-Enterology and Proctology, Urology).

Planters (400 rooms), Fourth and Pine Sts., $2.00-$8.00 (Ophthalmology).

Plaza (200 rooms), 3300 Olive St., $2.00-$5.00.

Roselle (100 rooms), 4137 Lindell Blvd., $1.50-$3.50.

St. Francis (120 rooms), Sixth and Chestnut Sts., $1.50-$5.00.

Statler (650 rooms), Ninth and Washington Sts., $3.00-$9.50 (Practice of Medicine).

Stratford (100 rooms), Eighth and Pine Sts., $1.50-$3.50.

Terminal (100 rooms), Union Station, $1.50-$5.00.

Warwick (200 rooms), Fifteenth and Locust Sts., $2.00-$6.00 (Stomatology, Preventive Medicine and Public Health).

Westgate (125 rooms), Kingshighway and Delmar Sts., $2.00-$3.50.

BOOKS RECEIVED

The Glands Regulating Personality, by Louis Berman, M.D., Associate in Biological Chemistry, Columbia University; Physician to the Special Health Clinic, Lenox Hill Hospital. Publishers: The MacMillan Company, New York, 1921.

Vice and Health—Problems—Solutions, by John Clarence Funk, M.A., LL.B., Director Bureau of Protective Measures, Pennsylvania State Department of Health, Scientific Assistant U. S. Public Health Service. 174 pages. Price $1.50. Publishers: J. B. Lippincott Company, Philadelphia and London.

Pediatrics—Orthopedic Surgery, by Isaac A. Abt, M.D., and Edwin W. Ryerson, M.D. Volume IV of The Practical Medicine Series 1921. Price $1.75. The Year Book Publishers, 304 South Dearborn St., Chicago.

The Surgical Clinics of North America, October, 1921, Volume I, No. 5, Mayo Clinic Number. Published bi-monthly. W. B. Saunders Company, Philadelphia and London.

BOOK REVIEWS

OPERATIVE SURGERY. By J. Shelton Horsley, M.D., F.A.C.S. St. Louis: C. V. Mosby Company, 1921.

One who knows the serious purpose which Horsley brings to his work always welcomes anything coming from his pen. His wide experience in clinical work, as well as his experience in the experimental laboratory, amply qualify him for a work such as this. In so far as this book reflects his own experience is it especially valuable. The chapters on "Operations on the Stomach," "Suturing of Blood Vessels," "Reversal of the Circulation," all reflect not only a considerable clinical experience founded on experimental work, but also originality of thought. Horsley's method of suturing blood vessels and of pyloroplasty are well known and have added to the respect in which he is universally held. Perhaps one reason why surgeons generally respect him is the fact that they know absolute reliance can be placed on his statements. Some may differ from his views but all know that these views are the result of a serious study of the physiological needs underlying the procedure. The chapter on "Surgical Drainage" is a good example of the author's thorough understanding of the "biologic processes" underlying the need for drainage. In fact there is so much food for thought in this book which is not ordinarily found in a treatise on "operative surgery" that the reviewer wishes those who do not know Horsley were given a better hint as to what was in store for all who read the book than the title "Operative Surgery" implies. It is sometimes very difficult to find a title which fits the text and does full justice to it. Horsley, himself, states that this book does not pretend to be a complete textbook on "Operative Surgery." This can safely be left to larger textbooks and systems of surgery. The reviewer would be bold enough to suggest that when the book comes to a deserved second edition the title be changed to "Surgical Problems, With Especial Reference to Certain Underlying Biologic and Physiologic Principles." This, of course, is a longer title but the reviewer believes it more nearly expresses the subject matter.

J. S. Rodman.

(*Continued on page xiv*)

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ORIGINAL ARTICLES

Symposium: Diabetes Mellitus

THE TREATMENT OF DIABETES BY THE GENERAL PRACTITIONER*

ELLIOTT P. JOSLIN, M.D.
BOSTON, MASS.

The place for the treatment of diabetes is in the home, because diabetes is primarily a home and not a hospital problem. Just in so far as this is accomplished will the greatest measure of improvement in the treatment of the disease be obtained. Diabetic patients live for years, and they are too nearly normal to pass any considerable portion of their lives in a hospital. The treatment of a disease which is not contagious and yet is so widespread as to affect about one million people in the United States should be so simple that any physician may carry it out in the household of the patient. Indeed, formerly the diabetic patient who was treated at home was often far safer than the diabetic patient cared for at the hospital, but since the introduction of new methods in 1914 the reverse has been the case, because the advances in hospital treatment have been more rapid than in home treatment. To-day the greatest immediate opportunity for progressive treatment of diabetics throughout the country depends upon the improvement of treatment in their own homes. The same methods which have been found useful in the hospital should be introduced into the home and the promotion of this object is the purpose of this paper.

Ultimately the general practitioner is the best judge of methoods of treatment of a chronic disease. He it is who sees its course from beginning to end, and he it is who has the opportunity to compare results for long periods of time. On the other hand, one should not decry hospital treatment too much. Hospital treatment and home treatment each have their place. Patients with diabetes who are doing badly go to the hospital; patients apparently doing well, as for example, early and mild cases, stay at home. It is just as important to study the latter group of cases as it is the former. Here is a field of investigation open to the general practitioner, and unless it is tilled, it will be disastrous for both severe and mild, late and early cases.

It is to the interest of the general practitioner to treat his diabetic patients well, but to do so requires some thought. The day is past and gone when a doctor can give a diabetic patient a slip of paper with the word "eat" and "don't eat" upon one side and an advertisement for peptonized milk upon the other and yet retain his patient's respect. The reason why the diabetic diets recommended by a well-known drug company are employed so generally in the treatment of diabetes is simply that their use requires only a minimum of exertion to tear off the perforated diet slip and hand it to the patient. Unhappily the method works but once, because when the case comes back the patient usually brings the crumpled slip, and there is no object in giving him a duplicate.

Instead of a list of "do" and "don'ts," three cards are submitted for your criticism. They simply represent the modern trend of medicine—the education of the patient. In diabetes, education counts and the successful doctor must be a teacher. The three cards are: a pink card for recording diets, a blue card with a few directions on the back to prevent neglect of the patients' instruction, and a yellow card (See Table 1 and 2) which contains both all that is essential for the patient to know about reckoning his diet and also a group of test diets which the physician can use to make his patient sugar free and of maintenance diets to keep him sugar free while securing an adequate supply of food.

Before describing these diets it may be appropriate to say one or two words regarding the relation of general practitioners and doctors who treat their diabetic patients to a large degree in hospitals. It very commonly occurs when a general practitioner sends a patient to a specialist that the specialist continues to treat the patient, and this is not strange. In a hospital a patient sees a considerable number of diabetic patients being treated, learns a great deal about the disease, and cannot but be impressed with the number of assistants, nurses and technicians who are devoting their entire time to his benefit. If the hospital is fulfilling its purpose, the patient feels the spirit of investigation round about him and realizes that honest effort is being made to improve the treatment of diabetic patients *en masse,* as well as in particular. When he returns home he misses the glamour. He is often trained in certain details of diet better than his own physician, and he is quick to see it. He, therefore, wishes to return to the hospital for future treatment and advice.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

TABLE NO. 1 FOODS ARRANGED APPROXIMATELY ACCORDING TO CONTENT OF CARBOHYDRATES.

Water, clear broths, coffee, tea, cocoa shells and cracked cocoa can be taken without allowance for food content.

	5%		10%	15%	20%
	1%-3%	3%-5% *	10% *	15%	20%
Vegetables—(Fresh or Canned)	Lettuce Cucumbers Spinach Asparagus Rhubarb Endive Marrow Sorrel Sauerkraut Beet Greens Dandelion Greens Swiss Chard Celery Mushrooms	Tomatoes Brussels Sprouts Water Cress Sea Kale Okra Cauliflower Egg Plant Cabbage Radisbes Leeks String Beans canned Broccoli Artichokes canned	String Beans Pumpkin Turnip Kohl-Rabi Squash Beets Carrots Onions Green Peas canned	Green Peas Artichokes Parsnips Canned Lima Beans	Potatoes Shell Beans Baked Beans Green Corn Boiled Rice Boiled Macaroni
Fruits	Ripe Olives (20% fat) Grape Fruit		Watermelon Strawberries Lemons Cranberries Peaches Pineapple Blackberries Gooseberries Oranges	Raspberries Currants Apricots Pears Apples Huckleberries Blueberries Cherries	Plums Bananas Prunes

1 gram protein,	4 calories.
1 gram carbohydrate,	4 calories.
1 gram fat,	9 calories.
6.25 gram protein contains 1g. nitrogen.	

1 kilogram=2.2 pounds.
30 grams g or cubic centimeters c. c.=1 ounce.
A patient "at rest" requires 25 calories per kilogram.

*Reckon average carbohydrate in 5% veg. as 3%—of 10% veg. as 6%.

(30 grams 1 oz.)	Carbohydrates	Protein	Fat	Calories
Contain approximately	G.	G.	G.	
Oatmeal, dry wgt.	20	5	2	118
Shredded Wheat	23	3	0	104
Cream, 40%	1	1	12	116
Cream, 20%	1	1	6	62
Milk	1.5	1	1	19
Brazil Nuts	2	5	20	208
Oysters, six	4	6	1	49
Meat (uncooked, lean)	0	6	3	51
Meat (cooked, lean)	0	8	5	77
Chicken (cooked, lean)	0	8	3	59
Bacon	0	5	15	155
Cheese	0	8	11	131
Egg (one)	0	6	6	78
Vegetables, 5% group	1	0.5	0	6
Vegetables, 10% group	2	0.5	0	10
Potato	6	1	0	28
Bread	18	3	0	84
Butter	0	0	25	225
Oil	0	0	30	270
Fish,cod,haddock (cooked)	0	6	0	24
Broth	0	0.7	0	3
Fruit, 10%	3	0	0	12

Form J. 6. Thomas Groom & Co., Inc.,
105 State St., Boston.

At the hospital as a routine certain laboratory tests are carried out which, because of the large number daily performed, are relatively inexpensive, yet outside of the hospital they cost a great deal. To a large extent this latter condition cannot be remedied, though the adoption of coöperation in laboratory work by groups of doctors will help to minimize it. In consequence the general practitioner frequently loses his patient, and this is often considered to be due entirely to the greed of the hospital authorities, and, as often proposed, that the remedy must come only through them. To only a partial degree is this the case. The remedy really lies with the general practitioner. Two suggestions are offered: 1. Four-fifths, and perhaps nine-tenths, of all the diabetic patients coming to the hospital could be treated by the general practitioner at home with excellent results and with mutual advantage to physician and patient. By this means not only would the patient be saved the initial expense of hospital treatment, but from the start he would be taught in home language how to take care of himself. If he never goes to the hospital, then the hospital does not secure even an innocent hold upon him. 2. The physician who sends a patient to a hospital should become acquainted with the methods there employed. This is readily possible, and, if done, the methods of treatment essential for at least 19 out of 20 cases can be carried out in the patient's home with the facilities which the physician's laboratory offers. There are communities where large numbers of diabetic patients are treated by doctors who, in several cases, have become acquainted with methods of diabetic treatment through a mild diabetes of their own, and I never have greater satisfaction than when a diabetic doctor tells me that he has ten to twenty diabetic cases doing well. The doctor interested and instructed in the treatment of diabetes gets good results in the home.

The examination of the yellow card (Tables 1 and 2) begins with a list of liquids, free from nutritive value, which are always allowable to diabetic patients. Then come groups of foods, arranged according to their content of carbohydrate. In the 5 per cent group are included vegetables containing from 1 to 5 per cent sugar and starch. On account of this wide range it is justifiable to consider that a mixture of these contains about 3 per cent of carbohydrate or 1 gram to the ounce. These are the safest carbohydrate foods for diabetics. Next comes the group of vegetables which do not exceed 10 per cent of carbohydrate, and on the average contain about 6 per cent carbohydrate. This group is next best for the diabetic. Then comes the 15 per cent group, still less desirable; and finally the most dangerous group, the 20 per cent vegetables in which potatoes are classed. Next in order of danger, as Dr. John R. Williams suggested, one might place gluten breads, with their 30 per cent more or less carbohydrate, and last of all bread, which contains approximately 60 per cent carbohydrate. Fruits must be reckoned at their absolute carbohydrate value. The best fruit for diabetics is grape fruit, of which 100 grams contain 5 per cent carbohydrate or 5 grams. Strawberries contain approximately 7.5 per cent, oranges 10 per cent. Apples are barred from practically all diabetics, because a moderate sized apple weighs 200 grams and contains 15 per cent carbohydrate or 30 grams —two tablespoonfuls of sugar! Even a banana with 20 per cent carbohydrate is safer than an apple, because it weighs less (100 grams) and thus contains only two-thirds as much sugar. Furthermore, a patient can eat an apple, including the core, but I have never known even a diabetic to eat a banana skin. In other words, patients allowed apples are apt to eat them inadvertently and forget to reckon them, while a banana peel serves as a reminder.

The other half of the card shows the amount of carbohydrate, protein, and fat in 30 grams (1 ounce) of the foods upon which diabetic patients live. In general, fractions are avoided for the sake of simplicity. Thus oatmeal, 30 grams dry weight, but 6 to 8 times as much cooked and so representing a large saucerful, contains carbohydrate 20 grams, protein 5 grams, and fat 2 grams—approximately 118 calories.

TABLE NO. 2 DIABETIC DIETS

DIETS WITH WHICH TO BECOME SUGAR FREE	DIET IN GRAMS				TEST DIETS														Name of Diet
	Carbohydrate	Protein	Fat	Calories	5% Vegetable	Orange	Oatmeal	Shredded Wheat	Uneeda	Potato	Bread	Egg	Cream 20% fat	Bacon	Butter	Meat	Fish	Skimmed Milk	
T. D.1	189	89	15	1247	300	300		1		240	90					90	120	480	1
T. D.2	102	58	0	640	300	300		1		120							180	300	2
T. D.3	64	33	0	388	300	300				60							90	240	3
T. D.4	36	27	0	252	300	200											90	120	4
T. D.5	15	5	0	80	300	50													5
MAINTENANCE DIETS					CARBOHYDRATE (C)							PROTEIN AND FAT (PF)							
C1 + PF1	10	11	6	138	300							1							1
C2 + PF2	22	13	18	302	300	100						1	60						2
C3 + PF3	32	24	24	440	600	100						2	60						3
C4 + PF4	42	29	39	635	600	200						2	60	30					4
C5 + PF5	52	32	53	813	600	200	15					2	60	30	15				5
C6 + PF6	63	43	65	1009	600	200	30					2	90	30	15	30			6
C7 + PF7	73	51	70	1126	600	300	30					2	90	30	15	60			7
C8 + PF8	83	59	87	1351	600	300	30		2			2	90	20	30	90			8
C9 + PF9	96	62	93	1469	600	300	30	½	2			2	120	30	30	90			9
C10 + PF10	107	63	93	1517	600	300	30	1	2			2	120	30	30	90			10
C11 + PF11	131	75	98	1706	600	300	30	1	2	120		2	120	30	30	120			11
C12 + PF12	155	79	98	1818	600	300	30	1	2	240		2	120	30	30	120			12

Food	Wgt. in Grams	Approximate Equivalent	Food	Wgt. in Grams	Approximate Equivalent
Orange	300	One and one-half (large size)	Bread	90	Three small slices
5 per cent vegetables	300	Three moderate portions	Oatmeal (dry wgt.)	30	One large saucerful
Skimmed milk	480	One pint (16 ounces)	Cream	60	Four tablespoonfuls
Fish	120	Two small portions	Bacon	30	Four crisp strips
Potato	240	Two medium-sized potatoes	Butter	30	Three medium portions
Meat	90	One moderate portion			

Form. 4. Thomas Groom & Co., Inc., 105 State St., Boston, Mass.

A recent publication from a well-known hospital states that "without supervision at home to an extent which is impracticable it is a waste of time to work out orders for a diet in weighed portions, because of the unforeseen variables which vitiate the accuracy of the result," and the report goes on to say that "in most cases the safest plan is to talk simple, untechnical language: The patient is to eat no bread, cereals, sweets, or potatoes, to limit meat to a moderate portion once a day, to eat freely (or sparingly) of butter, cream, or bacon." Control of the case is provided by urinary examinations. One can sympathize with the weary young out-patient hospital physician even if one does not agree with his ideas, but their appearance in such a setting compels one to meet and attempt to conquer the difficulties described. It is true that education of the diabetic is needed in the ABC's of the disease and not in the realm of higher criticism. Education is demanded, that the patient may understand the disease in order to see the reason for prolonged treatment, but if we physicians should give up accurate prescriptions of carbohydrate, protein, and fat for our patients, the treatment of diabetes in this country would revert to that of the last century. Cantani and Naunyn recognized the necessity for a knowledge of accurate food values, of limitation of calories, and of temporary fasting, though it is true that it took Guelpa and Allen some decades later to crack our thick skulls to let the knowledge in. There is, however, a marked distinction between the kind of knowledge of food values which the doctor and patient should possess. The doctor is dependent upon calories and their source, but not so the patient. The latter derives just as much nutriment from an egg whether he recognizes it as such or as the physician should visualize it: namely, as an article of food composed of protein and fat—6 grams. To such an extent the poor overworked out-patient physician is justified in writing his prescriptions in eggs and not in protein and fat, but it is our duty to help him, and incidentally ourselves, by securing other equivalents. Fortunately such are available. Thus, an ounce (30 grams) of cooked lean meat contains of protein about 8 grams and fat 5 grams; an ounce of cooked lean fish, 6 grams of protein alone; an ounce of crisp bacon (4 slices) protein 5 grams and fat 15 grams; an ounce of butter 25 grams fat; an ounce (two tablespoonfuls) olive oil, 30 grams fat. Turning to carbohydrate, a small orange contains 15 grams carbohydrate, and the same quantity is found in half a grape fruit, which is the quantity in three Uneeda biscuits. A shredded wheat biscuit weighs just an ounce and contains carbohydrate 23 grams, protein 3 grams. To-day the above are our standard diabetic drugs, whose doses (food values) we all must know. There are but two other essential groups: namely, vegetables and milk products. Three moderate portions of mixed vegetables containing from one to five per cent carbohydrate, often called 5 per cent vegetables, weigh about 300 grams and contain carbohydrate 10 grams (1 gram to the ounce) and protein 5 grams (0.5 gram to the ounce). Milk contains to the ounce, carbohydrate 1.5 grams, protein 1 gram, fat 1 gram, and cream with 20 per cent or 40 per cent butter fat carbohydrate 1, protein 1, and fat 6 or 12 grams, respectively. Other foods (drugs) may be added to the list, but they are frills almost as much as the brans, agar-agar jellies, and non-nutritive flours.

Upon the reverse side of the card (Table 2) is a set of diabetic diets. In the upper section are test diets, which, if followed for successive days, should render the urines of a large percentage of all diabetic patients coming for treatment sugar free. This method of rendering the urine of the diabetic sugar free has been employed for about two years. Its merit is safety. Undoubtedly it may be improved, but after having used it successfully with several hundred hospital cases one hesitates to abandon it until assured that an alteration will give better results. Test Diet 1 consists of food of simple character which contains about half as much carbohydrate as the normal individual eats, and fully as much protein, but practically no fat. By this means several ends are accomplished. First, by the exclusion of fat a diet of moderate undernutrition is secured, an essential no matter the method of treatment. Second, a diet free from fat is less apt to upset the digestion, and in the transition period of treatment this is very important. Third, a diet with the fat reduced with the simultaneous use of a liberal quantity of carbohydrate gives less occasion for the development of acidosis or dispels any existing acidosis. On successive days the carbohydrate and protein are reduced until upon the fifth day the diet is made up of carbohydrate 15 grams, protein 5 grams given in the form of 5 per cent vegetables 300 grams and orange 50 grams. Should the patient be unable to weigh his food, he will find their approximate equivalents in the notes at the bottom of the card.

Not all patients need begin with the diet of the first day. Children, for example, would not require so much food, elderly people would not eat as much if it was placed before them, and cases already under treatment with reduced diets should not be given a new diet with twice or thrice as much carbohydrate as that to which they are accustomed. It is, however, always safe to give at the start more rather than less carbohydrate than the patient has been eating or excreting in the urine during the twenty-four hours, because these diets, with their reduced caloric values, due to the elimination of fat and reduction of protein, promote a better utilization of carbohydrate.

Should the patient not become sugar free by the use of Test Diets 1 to 5 on successive days, he may be fasted for one, two, three, or even four days, but a fast of more than one day will seldom be necessary. If he does not become sugar free with fasting, he may be fed as outlined below for a week and then fasted again for a shorter period. Cases requiring several days of fasting or repeated periods of fasting to become sugar free and also cases who cannot tolerate 20 calories per kilogram body weight are good candidates for hospital treatment.

Maintenance Diets.

When the patient does become free from sugar one can proceed to the twelve maintenance diets outlined below. The diet for each day is divided into two parts, the one consisting largely of carbohydrate (C), and the other consisting largely of protein and fat (PF). These are arranged with increasing quantities for twelve successive days, and for convenience the numbers 1 to 12 are attached to the initial of each part of the diet: thus C^1, C^2, PF^1, PF^2, etc.

It will be observed that the diets are planned so that carbohydrate increases about 10 grams a day, while protein is held comparatively low, and that fat is introduced earlier than has been the customary practice—an acknowledgment to Newburgh and Marsh. The protein and fat are increased somewhat less rapidly than the carbohydrate. When the protein nears 70 grams and the fat 100 grams, the carbohydrate in the diet advances rapidly. Mild cases of diabetes and some others, who do not appear at first as mild, will progress from day to day and ultimately take the full diet of the twelfth day: $C^{12}PF^{12}$. Case 2343, age 20 years, with onset within two months, showed 8 per cent of sugar on September 14, 1921. As he stated that he voided five quarts, approximately 5000 c.c. of urine in 24 hours, the quantity of sugar excreted was about 400 grams. He became sugar free on the test diets in 5 days, and 10 days later took essentially the food of the twelfth maintenance diet day. His first blood sugar September 13 was 0.48 per cent, his blood sugar on the last day, September 28, was 0.11 per cent. The recent onset of the disease is the explanation of this patient having done so well. If the tolerance for a patient is greater than that of the food of the twelfth day, it is wiser to increase food in the form of carbohydrate, because such increases show harmful results more rapidly through the appearance of glycosuria than as if the increase were in the form of fat.

Should the patient show sugar in the urine upon the diet of, for example, the fifth day, as frequently occurs, it is a simple matter to drop the carbohydrate portion of the diet back two days and prescribe C^3 instead of C^5, and then continue to increase the protein and fat in the diet for successive days, PF^5, PF^6, PF^7, and so on until the patient receives enough calories for his body weight.

Conversely, should the patient not require as much protein and fat as is given in the diets of different days, it is easy to progress for several days with the carbohydrate group of foods and drop back with the protein and fat group. Thus the table can be alternated back and forth at will. It enables one to determine quite simply the tolerance of the patient for protein and fat as well as carbohydrate. To a large extent it lessens arithmetic.

Many patients become sugar free with the third or fourth test diet—that is, upon carbohydrate 64 grams, protein 33 grams, and fat 0. It is unnecessary for such patients to progress with Test Diets 4 and 5 and then to begin with the first of the Maintenance Diets. Such a patient could at once be put on the diet for the fifth day C^5PF^5, and further progress with the diets would commence here.

A critical examination of these diets will show that they give a low rather than a high quantity of food. In the early treatment of a diabetic patient undernutrition is essential to secure prompt results, and in the subsequent treatment one must remember that undernutrition is safer than overnutrition. Extremes in either direction are undesirable, but the greater danger lies with overnutrition. Just as the fat man is more liable to develop diabetes than the thin, so overnutrition is more likely to do harm to the individual who has acquired diabetes than is undernutrition. It is not generally realized that the expectation of life after the age of thirty-five is better for the individual who is twenty pounds or more underweight than for the individual of average weight and far better than for the individual overweight. A man of fifty years may even be forty-five pounds underweight and yet the expectation of life for a group of individuals so much below weight is better than if they were of average weight.

Improvement in the Treatment of Diabetes Mellitus.

The improvement which has taken place in the treatment of diabetes during the last few years has wrought great changes in the character of the disease. A type of patient is seen to-day which a few years ago did not exist, because of early deaths. Formerly acidosis was common, and each morning on reaching the hospital one wondered whether patients seen the day before would still be alive. To-day acidosis is rare and seldom causes anxiety. Various concrete proofs of the improvement in diabetes are at hand, quite apart from the lessening in hospital mortality, which up to 1914 had been twenty-seven deaths for every hundred admissions for almost one hundred years. Among the last 600 cases (slightly more or less) coming under my own observation at various hospitals since April 1, 1919, there have been 11 deaths. At these hospitals the type of case is fully as severe as at the average hospital throughout the country and far more severe than the ambulatory cases treated in dispensaries, as I am assured by my former assistants, Drs. F. Gorham Brigham and Albert A. Hornor, who see large groups of such cases at the Massachusetts General Hospital and Boston City Hospital. The prolongation of life of children from an average of one year to about three years registers an advance. The outlook in children is still pathetic, but if it has been possible to bring about so great an improvement in the treatment of children, the same methods applied to the treatment of adults, who have the disease in a far milder form, will be sure to lead to a greater gain. It is fair to say that children live three times as long to-day as eight years ago, and adults on the average half again as long. Case No. 894 developed diabetes at the age of one and a half years, showing 5.3 per cent sugar. She is alive and happy to-day, at the age of 8½ years, though not sugar free. The future, however, holds out many avenues for improvement in present methods, and although the prevention of the disease may not exactly come under this heading it deserves mention in this place.

The Prevention of Diabetes.

Obscure as the etiology of diabetes remains, two facts stand out so prominently as to furnish a sound basis for the prevention of the great majority of the cases similar to those now coming for treatment. The more important of these two factors is obesity. Three out of four cases show it in general, and from forty years onward only 5 per cent of the cases are under weight. Begin with yourselves. Keep from being overweight. Don't let your families get overweight. Warn your patients that those born to be thin should never be fat, and earn their gratitude. The second factor open to attack in the etiology is heredity. To what extent this is of significance and how much it is dependent upon the obetic environment it is hard to tell, but heredity is not to be lightly dismissed. I like to think that any hereditary predisposition can be largely overcome by avoidance of obesity, together with insistence on a liberal amount of exercise, and of sleep, and of moderation in the use of sugar. Considerable discretion must be employed in seeking for fresh cases in diabetic families or undue anxiety will be engendered. As yet too little data have been accumulated as to how best to treat them. Let us not forget that it is not so long ago that the discovery of a floating kidney put the patient's life in jeopardy. The rule that each individual should have the urine examined on the birthday establishes a habit and avoids especial attention being directed to the possibility of diabetes.

Diabetic Records.

Systematization of records which will allow comparisons between the carbohydrate in the diet and the sugar in the urine is absolutely essential in order to secure good results with dietetic methods. Doctor and patient must balance accounts and good bookkeeping is required. Unless the patient can see the results of following or breaking diet, he cannot be prevailed upon to continue to deny himself what he wishes most. Summaries of urinary examinations are required, and the use of a diabetic chart of some sort is strongly advocated.

Causes of Death in Diabetes.

The practitioner should always have clearly in mind the causes which lead to the death of his patient. When caring for a patient with typhoid fever or consulted by a case of duodenal ulcer one is always alive to the possibility of hemorrhage or perforation. So in diabetes, coma, which was and is the most common cause of death, is ever at hand. To be sure, this has decreased greatly, but it is probably still the cause of at least half of all deaths in diabetes, and is responsible for nine out of ten of those deaths occurring during the first year subsequent to onset. Diabetic coma, therefore, is the one accident which must never escape the doctor's thought and all treatment should be directed with this consideration in mind. The avoidance of diabetic coma should certainly double the duration of life of all cases. On the other hand, with older patients the primary cause of death is the group of complications associated with gangrene and infections, although here too acidosis repeatedly is a secondary element. Diabetic coma and diabetic gangrene, therefore, are to be avoided.

Treatment of Diabetic Acidosis.

The measures which lead to the prevention of diabetic coma are simple. It is almost unknown when the patient is sugar free; it seldom occurs when the patient is underfed. The cause of the diabetic coma is acid poisoning, and the acids responsible for it have their chief source in fat. It is somewhat indifferent whether this is food fat or body fat, but the body is less likely to consume its own body fat to excess, and consequently an undernutrition diet is less apt to be an excessively high fat diet. The commonest cause of diabetic coma in former days was the sudden increase of fat in the diet, combined with decrease in carbohydrate. With these facts in mind, a large proportion of the deaths from diabetic coma can be prevented. In the presence of threatening symptoms of acidosis the treatment which has served me best has been the simplest. Last week a boy came to my office with 5 per cent sugar and four plus diacetic acid. The next noon he was in beginning coma, and even the next day recovery was extremely doubtful, but finally he did improve, and appears to be out of danger.* The general plan of treatment employed was somewhat as follows: (1) Rest in bed. (2) Special nursing. (3) The ingestion of at least one-half pint an hour of simple liquids, usually hot, and cautiously given so as to not upset the stomach, such as hot water, coffee, or broths. As liquids were not borne by the mouth for more than a few hours recourse was had to enemata and injections of normal salt solution intravenously and subcutaneously. (4) At the very beginning the bowels were evacuated by enemata in order to avoid diarrhea. (5) When in the course of treatment a suggestion of nausea appeared, the stomach was washed out. (6) The maintenance of the circulation by digitalis and caffein was not required in this case. (7) The preservation of body heat by the application of external warmth was carried out. (8) The previous diet had been liberal with the usual story, finally elicited, of an excess of fat. The fat was omitted. The carbohydrate portion of the diet was continued, taking care to administer its equivalent in simple form, such as oatmeal gruel, skimmed milk, and orange juice. When the 100 grams carbohydrate prescribed was not retained by the stomach a portion was given in the form of glucose by the rectum. Had the patient been on a low diet and accustomed to fast, fasting would have been adopted. As improvement began the carbohydrate was gradually curtailed.

It will be noticed that alkalis were not employed. For fifteen years I tried alkalis in such cases and can confidently say that since I have omitted them the results obtained have been better. This may not be due entirely to the omission of alkalis. However the reasons which have led me to give up their use are as follows:

1. Alkalis frequently upset the digestion, cause vomiting, and thus interfere with the administration of food, and, what is more important, with the administration of liquids. A diabetic patient who cannot take liquids in the early stages of coma is almost lost. To some extent the lack of liquids can be compensated by liquids introduced by rectum, by vein, or under the skin, but the quantity of liquids required is so great that these avenues of entrance are inadequate.

2. It is quite possible that acids, which are held combined in an innocuous state in the body, are set free by the alkalis and no longer remain latent and harmless.

3. The use of alkalis increases the excretion of acids through the kidneys. The excess of acids, whether free or combined, passing through the kidneys injures the kidneys, and if this continues for any considerable length of time anuria gradually develops. "The showers of casts" at the beginning of coma are evidence of the injury to the kidneys by these acids.

4. Convulsions and death not infrequently are reported as the result of the use of alkalis.

5. The use of alkalis causes annoyance to the patient, work and worry for the nurses and doctors, and, if these must be given intravenously, exposes the patient to sepsis. I have seen this last condition result in patients coming to me who have been given alkaline treatment at the most modern hospitals.

6. Finally and of decisive importance, it has repeatedly been shown that, even if the normal alkalinity of the blood is restored by alkalis, coma may continue and death result.

Gangrene and Infections.

The second group of causes of death in diabetes is made up of conditions which demand a surgeon for their cure. These are gangrene and infections. To a large extent they can be obviated, and it is the duty of each practitioner to instruct his patients in the avoidance of injuries, especally to the feet, by speaking plainly about the care of toenails and corns and the danger of superficial abrasions, and to emphasize the necessity of promptly reporting the slightest sign of skin infection to the physician. The last few years have seen great advances in surgery of diabetics. Surgery has become more gentle, and the same methods which have lessened the mortality in the surgical treatment of goitre and abdominal affections have aided in the recovery of the surgical ailments of diabetic origin.

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*Alive February, 1922.

Surgery in Diabetes.

When surgery is indicated in diabetes, its application should be gentle. This rule holds both in medical as well as in surgical treatment. It is desirable that (1) the urine should be acid free, (2) the urine should be free from sugar, and (3) that anesthetization should be carried out without chloroform or ether. These three rules, however, are not absolute, and when operation is immediately indicated from the surgical standpoint one or all of the medical rules must give way. Successful treatment is based on the combination of gentle and simple medical methods which do not suddenly and radically change the dietetic habits of the individual, and surgical assistance of the highest order. It is a fact that the poor results of surgical treatment in the past were due many times more to the poor medical treatment which the patient received than to improper surgical treatment. It may be necessary to operate upon the patient even in the presence of acidosis and sugar. This is especially the case when the surgical lesion is caused by gangrene or sepsis. Under these circumstances one's faith is pinned to moderate undernutrition, such as is represented by a diet of 10 to 15 calories per kilogram body weight. For the first few days or even for one or two weeks the reduction of urinary sugar may be slight, but it seldom happens that three weeks go by without its complete disappearance. It not seldom happens that elderly patients with gangrene become sugar free while the diet is later being increased, provided it is not in excess of 20 calories per kilogram body weight. As a rule surgery is invoked in diabetes for conditions which should never have been allowed to arise.

Blood Sugar.

(1) A knowledge of the per cent of sugar in the blood is of value in treatment. In a case of pregnancy, when traces of sugar are found in the urine, it is a comfort to learn that the blood sugar is not above the normal percentage of 0.10 per cent before breakfast and that after a meal it has not even reached the allowed 0.14* per cent. Indeed, without this knowledge one has considerable anxiety with such cases and would often feel compelled to restrict the carbohydrate in the diet to an unnecessary degree and to control the relation of the urinary sugar with that of the carbohydrate in the diet so frequently as to be extremely annoying to the patient. Most pregnant women showing sugar appear to escape diabetes, though not infrequently the development of diabetes can be traced to this period. This is not remarkable, because overnutrition is then almost invariably present although overweight may be absent. (2) Blood sugar estimations are again of real value in the discovery of cases of renal glycosuria, and although these cases are very rare they are important. The practitioner can suspect he is dealing with such a case if the patient appears to be in good condition, a mild diabetic, and does not become sugar free with the customary restriction of diet, such as represented by Test Diets 1-5. In cases of renal glycosuria blood sugar tests are essential, and particularly glucose tolerance tests. These latter, however, are in their first stages of development. Their results are by no means uniform. Very likely smaller quantities than 100 grams glucose will serve the purpose. There is also the possibility of a false inference being drawn from the test if the glucose is given after several days of a restricted diet. Finally the newer methods of estimating the total sugar in the urine may make these blood tests entirely superfluous. (3) Blood sugar estimations are of distinct service in the treatment of extremely severe diabetics and of diabetics with arteriosclerosis. The urinary sugar changes slowly in these patients and so, in fact, does the blood sugar, but its gradual fall indicates that the time is approaching when the urine will become sugar free. (4) Blood sugar estimations are also of great help when additions to the diet are being made. A normal blood sugar value gives a feeling of security which the report of a sugar free urine does not engender. In former days the diet of a patient was often increased just before discharge from hospital treatment and a few days later the mail would bring a letter of disappointment from the unhappy subject, because of the return of sugar. A rising blood sugar value, despite a sugar free urine, prevents that misfortune. (5) Conversely, it sometimes happens that the diet is too restricted, particularly with severely undernourished diabetics, as was recently described in the Boston number of your Philadelphia publication, The Medical Clinics of North America. In cases of this type the discovery that the blood sugar is far below normal may save the life of the patient, because it allows the prompt administration of carbohydrate.

Country versus City Practice.

The difficulties which the country doctor finds in the treatment of his case of diabetes are those which render his judgment upon any course of treatment the best. The city doctor sees a patient a few times. If the patient does not do well he seeks medical aid from another quarter, and the first physician very likely is left in the belief that he treated his patient well. Not so with the country doctor, he must follow his patients through to the end, "for better, for worse." He is up against the disease diabetes, and he must face it and fight it week in, and month in, and year in and year out. If the patients tire of him they get no treatment at all.

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*Or even 0.17 per cent.

The city doctor, the specialist, and hospital physician very often are led to adopt harsh measures according to the patient's point of view. There is too often the suggestion that if you do not like my methods, seek those of others. There is not the same humanitarian appeal made to the city physician which the country physician experiences. The city doctor tries the new method; notes results in half a hundred cases more or less; publishes these immediate results; neglects to follow up all his cases, and, basing his conclusions on an insufficient length of time and on an insufficient number of reports, claims great improvement. The country doctor does not publish, but in five years he knows. What all of us want is for country doctors to keep such accurate records that they will give those who are forced to live in city streets the results of treatment in the fresh air.

It is not so much what we all get out of the treatment of our cases of diabetes as what we put into the treatment which brings satisfaction. Any diabetic doctor must be willing to work. Unless he has the spirit of Colbert, who rubbed his hands with glee when he came to his desk in the morning and found it piled with papers, he is sure to fail in his diabetic practice.

Medical practice is a good deal like a New England farm: it needs fertilizer. Sometimes one can get this through intrinsic work on the farm, but most commonly one is obliged to secure it from outside. Those medical farmers in Rochester, Minnesota, have the travel habit. Few of us will go astray if we follow their example.

The diabetic patient will surely consult someone whom he considers a specialist. The specialist may do him good or harm but it is his duty to put the family practitioner in touch with the methods recommended and to give him the opportunity of following up his case in the hospital, and to offer free advice upon numberless occasions.

The practitioner also has a duty: he must study and familiarize himself with new ideas so that the patient can see not only that he is interested, but that he actually knows about the diet. If this policy is not adopted by the practitioner, his patient is lost to him.

THE OPHTHALMOLOGISTS STANDPOINT*

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Just seventy years ago Herman Helmholtz gave to the medical profession his wonderful invention, the ophthalmoscope, that instrument which has opened the doors of hitherto hidden symptoms within the eye, the study of which has been a guide in the diagnosis and prognosis of many of the diseases of the body and of the brain. I think it is very proper, therefore, in the first place to pay tribute to that great scientist who made possible the greater part of the ophthalmological side of this symposium, for prior to this time ophthalmologists had but little in common with the internist and the surgeon in dealing with diabetes.

If we turn back the pages of ophthalmological history we will read that it was not until 1875 that we had any report of symptoms occurring within the eye other than cataract, as associated with diabetes. In that year Leber, in the German Archives of Ophthalmology, reported several cases. Shortly afterwards came von Graefe, Hirschburg, Koenig, LeGrange and others, with their reports, to be followed later by tabulation of reports and the citing of individual case or cases by various authors. From then on down to the present time authors in almost every land have added their reports to the ophthalmic literature, so that to-day we have an accumulated wealth of material on the subject at our command.

With no wish to depreciate the efforts of some of the earlier writers on the subject, we must, however, take issue with many of their statements regarding some of their described eye symptoms and pathological changes, likewise with the frequency and time of occurrence of these as the result of diabetes. The diversity of their opinions as to the etiology of these changes leads us to believe that there was a confusion of these symptoms; nor is this to be wondered at, because we must realize that at that time they did not have at their command the various laboratory tests which we now have at our disposal to solve many a perplexing case. Therefore, I am of the opinion that many of these described symptoms resulted from such diseases as lues, tuberculosis, anemia, focal infections, etc., associated with diabetes.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

Many of these authors placed the frequency of these eye symptoms in diabetes at 20 per cent to 33 per cent. As ophthalmologist associated with a large hospital, I have had the opportunity of examining many eyes for the internist and surgeon in diabetic cases. In connection with this I have reviewed 64 diabetic case records at St. Francis Hospital of Pittsburgh, and find the percentage to be only 11. I have likewise found that with the exception of diabetic cataract, eye symptoms in diabetes are more frequent where this disease is of long duration, and that it occurs mostly late in life, that is, between 50 to 70 years of age.

Regarding the more frequent eye symptoms and pathological eye changes in diabetes, the following are found, in the order named: cataract, retinitis, refractive and accommodation changes, diseases of the optic nerve, ocular paralysis, iritis and iridocyclitis. Secondary complications such as glaucoma and disturbances in the vitrious, and keratitis, have been reported. As has been said before, diabetic ocular symptoms are generally found late in the course of the disease, but an occasional eye symptom in the early stages of diabetes is seen by the ophthamologist in the daily routine of his office work. These patients describe some such symptom as loss of some visual acuity, distressing symptoms in near work, or a diplopia, etc., and upon ophthalmological examination, finding certain symptoms or pathological changes within the eye, we refer the patient to the internist or laboratory or both, for an etiological diagnosis, and the report comes back that our patient has diabetes.

From a review of much of the literature on the subject, and from a study of our hospital cases, we take up the more important symptoms or pathological changes in the individual parts of the eye as they are found in diabetes. To go into detail in these and to recite more remote symptoms would consume too much time. Perhaps those who care to discuss this paper may wish to call your attention to other symptoms which I may have omitted.

Cataract.

Cataract resulting from diabetes may develop at almost any age. We have reported cases as early as the eleventh year, and up to extreme old age, the majority, however, occurring around 50 to 70 years of age. Both sexes are equally affected. The earlier ones are usually binocular, very rapid in growth and soft in character. In the latter cases the character of the lens differs but slightly from the ordinary senile cataract. Because of this we may at times have difficulty in determining whether or not we are dealing with a true diabetic cataract or simply a senile one, associated with diabetic symptoms.

The etiology of diabetic cataract is rather obscure and rests alone on theories, the principal causes given by authors being: chemical changes, dehydration and nutritive changes. These mean but little as they might be the cause of almost any form of cataract. Treatment of diabetic cataract differs very slightly from any form of cataract. It is, of course, operative.

In the young the prognosis is not so favorable; but in older patients, having built up the system, eliminating the sugar as far as possible, and with the absence of acetone and diacetic acid, the prognosis is usually favorable. The danger of slow healing inviting infection, iritis and hemorrhage, followed by secondary glaucoma, are complications following diabetic cataract extraction, and are too well known to all ophthalmologists to be gone into in detail. I am in favor of preliminary iridectomy, which produces little traumatism and gives us a fairly good indication of the healing process, and what we may expect when we come to the extraction.

Retinitis.

With the knowledge we have to-day through the use of the ophthalmoscope, simple diabetic retinitis is more rare than formerly thought. The fundi findings are usually of a mixed type; so much so that we are often unable to give a correct solution of the fundus picture, and our conclusions are only reached after an examination of the urine and various laboratory tests. The following are some of the principal features of the retinal changes seen in a pure case of diabetic retinitis:

The degenerative spots or patches are round, or nearly so, and are fairly central. The surrounding retina is seemingly healthy, the blood vessels are almost normal in appearance, while the optic nerve head is neither inflamed nor edematous and its outlines are fairly clear. These pathological changes usually occur late in the disease and are suggestive of advanced degenerative change in the tissues of the body. They are of binocular character, and in most cases accompanied by some loss of visual acuity with little hope of regaining any of the vision lost. Vitreous changes are nearly always present. In severe cases large hemorrhages into the retina or vitreous, with or without glaucoma, have been reported.

Changes in Accommodation.

These usually consist of a diminution in the range rather than a complete paralysis. The pupils are ordinarily of normal size and there seems to be slight alteration in the reactions of the irides. Rare instances of partial or complete paralysis of accommodation have been cited. As these accommodative changes occur around 40 to 50 years of age, care must be taken not to confuse it with presbyopia.

Many theories have been advanced for the etiology of these changes in accommodation, but as successful treatment in the elimination of sugar always shows improvement or cure of the disturbance in accommodation, it would appear that the cause must lie in some toxic action of the glucose on the nerve tissue supplying accommodation.

Changes in Refraction.

These alterations are quite common in diabetes. Beginning myopia is, by far, the most common change. This myopia has been known to decrease or even disappear as the sugar diminishes. This is accounted for by the swelling of the lens, and a recession of the same later. Many cases of an increase in hypermetropia have been reported, but one must be very sure these cases were not latent and made manifest by the glycosuria, before accepting this assertion.

Where the hypermetropia has really increased, it must be accounted for by a shortening of the globes, brought about by some change or loss in the fluids of the eye.

Diseases of the Optic Nerve.

This condition usually presents itself as a retrobulbar neuritis. Many cases of amblyopia were reported by the earlier writers, but again our better knowledge of optic nerve changes convinces us that some of these cases at least could be attributed to causes other than diabetes. However, we do see quite a number of true amblyopia due to diabetes. At the present time I have such a case. In this, as in the many reported cases, the recovery of vision is slow, yet where treatment of the diabetes is successful, visual acuity is likely to improve. This form of amblyopia occurs later in life than the tobacco and alcoholic amblyopia. Simple optic atrophy has been reported as a complication of diabetes but I should imagine this etiology would be a very difficult problem to prove.

Extra Ocular Paralysis.

Under this heading diplopia and ptosis are the two most frequent eye complications associated with diabetes. Any muscle or muscles may be affected, though those controlled by the third and the sixth nerves, either separately or in combination, are the ones chiefly involved. The causes of these paralyses have never been fully explained. Under favorable treatment for the diabetes, remarkable results may be obtained, except where the paralysis of the extrinsic muscles is a part of cerebral complication.

Iritis or Iridocyclitis.

Diabetic iritis has no characteristic clinical symptoms that differ from any ordinary iritis, except that while hypopyon is usually present, combined with a fibrinous exudate, the symptoms in general are not severe and the course of the disease ends favorably. In all grave cases of iritis, complications are likely and the prognosis for even useful vision may be poor. Cyclitis at times accompanies the iritis and may be followed by degenerative changes in the vitreous, or by hemorrhage with secondary glaucoma.

Suppurative Keratitis.

Several instances of this type of ocular complications in diabetes have been reported, but that diabetes in itself is the only etiological factor is difficult to prove. The symptoms are the same as any sloughing process of the cornea, where nutrition is seriously interfered with. These cases naturally end in blindness.

THE CHEMICAL PROCEDURES THAT ARE OF USE IN THE CONTROL OF DIABETES*

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The complete chemical study of a case of diabetes is a very elaborate and extensive procedure. Such studies as the oxygen consumption, respiratory quotient, heat elimination, fat and fatty acid content of the blood, dextrose-nitrogen ratio, etc., are at present available only for use in experimental work. Fortunately, however, such extensive tests are not necessary for the routine case.

There are now available simplified, yet accurate, chemical methods by means of which the well trained clinician may check up from day to day the metabolic condition of his diabetics so that he is able to carry them, without guesswork, along the routines that seem to give the best results. These tests, as they stand to-day, are few and simple. They are: (a) examination of the urine for glucose and acids; (b) determination of the glucose content of the blood; and (c) blood tests indicating the degree to which acid bodies have reduced the alkali reserve of the blood and tissues. All of these determinations have been so simplified that they can now be easily carried out by any physician who is willing to devote a few days time and thought to the mastery of the technique. These tests almost cover the field, as far as practical clinical control is concerned. A few additional ones are needed and undoubtedly will soon be perfected. Especially useful will be a simple method of determining the fat and fatty acid content of the blood.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

I. THE GLUCOSE CONTENT OF THE BLOOD

Only in recent years has the technique for blood sugar determinations been so simple as to make it practicable for routine clinical work. Even now there are a number of methods being used that are very apt to give grossly inaccurate results. Sources of error are: methods of collecting and measuring the blood sample, attempts to reduce everything to a very small scale, inaccurate standard solutions, and poorly trained laboratory technicians. Many blood sugar determinations are reported that are absolutely unreliable. The situation is improving with the more general recognition of the necessity for chemical accuracy and the adoption of the excellent methods of Folin or Benedict; and yet, every series of blood sugar findings should be viewed with suspicion and conclusions not be drawn until the possibility of faulty technique has been eliminated. By reason of this, despite the large amount of blood sugar data now appearing in the literature, conclusions based on large numbers of determinations are hardly justified as yet. However, careful study by individual workers, employing technique of unquestioned reliability, has established certain facts in regard to the blood sugar findings in health and disease. So much additional light has been thrown on the course of diabetes and its response to treatment, that blood sugar tests are now essential for the best management of a case. The well settled facts in regard to the glucose content of the blood are as follows:

Normally glucose is present in the circulating blood, its concentration being about 0.10 per cent. It falls below this in fasting and rises to about 0.12 per cent after a meal, quickly falling to normal. If it reaches a certain concentration it will, in normal individuals, appear in the urine. This is the "threshold point" and is usually between 0.14 per cent and 0.16 per cent. The variation of concentration of glucose in the blood of normals, after the ingestion of a large dose of glucose is of interest. It rises rapidly, reaching the peak in three-fourths of an hour to one hour, and falls rapidly, touching the normal in the second hour; it does not pass the threshold, hence no glucose appears in the urine. In mild or border-line cases of diabetes one finds a different picture. The percentage of glucose rises no more rapidly than in the normal case, but it continues to rise after the first hour and may not reach its peak until late in the second hour. This highest point is beyond the threshold and glucose appears in the urine. The return to normal is also prolonged. As cases of greater and greater severity are studied this same character of curve is simply accentuated, the rise in the blood being higher and higher and more and more prolonged. In the definite, well marked cases of diabetes this rise and prolongation of the concentration is so marked that one finds practically at all times a content above the normal. That is, the return to normal is so delayed that it is interrupted by the rise due to later carbohydrate ingestion. So we find in severe cases the blood sugar never touches normal as long as even small quantities of glucose are entering the blood each day. Realization of this makes it clear that the process is essentially the same, no matter whether the case be very mild or very severe, this being a rise above normal and a prolonged fall. It varies only in degree, directly with the severity of the case.

Bearing these points in mind it is possible to deduce certain facts from the blood sugar determinations in any given case of diabetes; but in order to utilize blood sugar determinations fully, it is essential that repeated tests be made under varying conditions. In fact, it is the blood sugar curve, during treatment, which gives the most valuable information. Single determinations are of use, principally, in making the diagnosis or in checking up a case after it has been thoroughly studied and understood.

In the preliminary examination of any case, that is, in making the diagnosis, a single determination may be of real help or it may be a dangerous pitfall. In the majority of cases, especially well marked ones, the blood sugar will be found to be definitely above normal even after several hours of fasting when the urine is sugar free. In these instances the single test will throw considerable light on the condition. But the physician must be wary and bear in mind the recognized behavior of the blood sugar curve in mild, moderate and severe cases. He must remember that the rate of rise and fall varies with the severity of the case and he must interpret the single determination in light of the time elapsing since food was taken and the urinary findings. In addition to the curve of the rise and fall, it is also known that chronic cases of the more severe grade have an increased renal threshold. Such a case may show no sugar in the urine and yet the blood sugar be as high as 0.18 per cent, and this despite the fact that the kidneys are not impaired. On the other hand, mild cases after a few hours fast, may show a blood sugar as low as 0.08 per cent; and in such an instance a single test may be very misleading.

A case under recent observation illustrates this. A woman of fifty was sent to the hospital to have her carbohydrate tolerance determined. Her physician stated that she had had, to his certain knowledge, diabetes for fifteen years, showing small amounts of sugar in the urine at frequent intervals during that time. The blood sugar on admission was 0.09 per cent, the urine gave no reduction and the ferric chloride test was negative. It was then learned that she had eaten nothing for twenty-four hours before admission. Her carbohydrate tolerance was found to be 70 grams in 24 hours and at this time her blood sugar was 0.22 per cent. In this case it would have been easy, in an office consultation, noting the negative urine and normal blood sugar, to have told her she did not have diabetes.

In the majority of cases of true diabetes, however, the blood sugar is well above normal even when the urine is sugar free. In such cases the effort should be to continue the treatment until the sugar figure is close to normal.

To sum up: The glucose content of the blood is indispensable in the diagnosis and study of a diabetic. It is always above normal in a diabetic who is excreting sugar in the urine. However, as a diagnostic test in a suspected case, a single normal determination cannot be accepted as final. In general a blood sugar curve which rises and falls rapidly indicates a mild case; one which remains high even under rigid treatment, a severe case. Treatment should be based on the blood sugar findings, rather than the urinary tests.

II. THE CHEMICAL TESTS ON THE URINE.

The urinary tests are very simple and can easily be carried out by the patient. Until a case is thoroughly understood these tests should be made on the twenty-four-hour collection. For the sugar, Benedict's solution is probably the most simple and reliable. If sugar is appearing the twenty-four-hour excretion should be determined. After tolerance is established and the urine is being examined daily as a check, a sample taken one or two hours after the evening meal is sufficient. Acid bodies are also to be watched for, using the ferric chloride test. Care must be taken not to confuse the similar color reaction appearing when such drugs as salicylates are taken. Differentiation is simple, the color due to acids disappearing if the urine is first boiled. I wish to cite an interesting instance in which the presence of diacetic acid in the urine aided in the diagnosis. A married woman of 35, overweight, underwent a general examination perparatory to tonsillectomy. The urine gave a faint, atypical reduction with Benedict's, negative ferric chloride test. She was sent for and the next day her blood sugar was determined. This was 0.11 per cent, leaving the diagnosis still doubtful. The urine, passed at the time the blood was taken, gave absolutely no reduction with Benedict's, but did give a very strongly positive ferric chloride test. On questioning, it was learned that, expecting to be operated on that day, she had eaten nothing for twenty-four hours. She turned out to be a definite mild case.

III. DETERMINATION OF THE ALKALI RESERVE

When, probably through faulty fat metabolism, oxybutyric and diacetic acids appear in abnormal quantities in the tissues, a very serious train of events may ensue. The signs and symptoms of this acid intoxication are due, in part at least, to the depletion of the reserve alkali of the blood and tissues, these being drawn upon to neutralize the acids. It is likely, also, that these acid bodies exert other direct toxic effects, not as yet well understood. However, we have in the measurement of the alkali reserve an excellent method of determining the extent to which the acid intoxication has proceeded. In the late stages this is of course clinically evident by reason of the dyspnea, cerebral and gastro-intestinal disturbances; but in the early stages such symptoms are not prominent. Here an accurate measure of the degree of "acidosis" is a most valuable aid in determining the course of action.

Many excellent tests for determining the alkali reserve are available. The determination of the carbon dioxide capacity of the plasma by the Van Slyke method is the test of election, but the apparatus and technique required place it beyond the reach of many physicians. A very simple test, yet sufficiently accurate to be of use for this purpose, is that devised by Sellards. This test may be carried out as follows: About one cc. of blood is withdrawn from a vein into a small syringe and expelled at once into 20-25 cc. of pure 95 per cent alcohol. It is shaken and the precipitated protein filtered off. A few drops of phenol-phthalein are added to the clear filtrate and it is then evaporated to dryness over a water bath in a white porcelain dish. If the normal quantity of carbonates are present, the filtrate turns pink as it approaches dryness, and remains pink; if there is slight reduction, there is only a faint pink as it dries and this fades out in a few seconds; if there is considerable reduction, no pink color is evident either during or after drying, but a pink will develop if one drop of distilled water is put on the dried residue; in case of very marked reduction there is no pink even with the distilled water. This test is very simple, requires no extra apparatus and is very reliable.

All cases showing the excretion of acetone bodies in any amount in the urine, should be checked up with a test for alkali reserve, in order that the condition may be met before it has gone too far.

DISCUSSION

Dr. Frederick M. Allen (Morristown, N. J.): There is so much to be said on this subject that a few points may be added, in passing, to the excellent discussions we have heard this afternoon. It seems to me that about two things can be expected from the general practitioner when he encounters a case of diabetes: one is simply an early diagnosis—not to allow cases to pass unrecognized for months and even years, as so commonly has occurred in the past; and, the other, to provide for such treatment as he would wish for a member of his own family. If he is in a position to administer treatment himself according to that standard, there is nothing to prevent him from going ahead with the case, and many practitioners do so ably and successfully. If he is not qualified to do so he should send the patient to someone who will apply the right treatment. If those two things were always done there would be a great decrease in disability and mortality from diabetes. To some extent this result has already been achieved. As Dr. Joslin has remarked,, diabetes to-day is a different thing from what it was some years ago. The type of case is largely different. As the speaker upon ocular complications remarked, our experience to-day does not coincide with the former experience. The ocular complications are less frequent than they formerly were. This result can be attributed to the general practitioners who treat such cases, because they make the diagnosis earlier and give better treatment. Likewise tuberculosis is less common among diabetics than formerly, because their resistance is higher under proper treatment than under treatment which allows the diabetic symptoms to persist.

There are faults remaining, and there is a type of practitioner whom the specialist does not like. This type of practitioner, for example, finds glycosuria in a patient and tells him not to worry, it doesn't amount to anything, and encourages him to go along for years, perhaps, as long as he is feeling fairly well, and advises him that sugar in the urine is preferable to privations of diet. The same type of man will take a diabetic who is starting well on a treatment and will observe that the patient is looking thin. It may be the man was obese and has merely reduced to normal weight, but this practitioner tells the patient he is not eating enough, and advises a more liberal diet, even though he does show some sugar; and the symptoms come back. Even if there is no glycosuria immediately following the return to liberal diet, and the patient perhaps thinks he is better than he was before, the fact is ignored that a specialist may have slowly built up the tolerance by careful restrictions, and now the patient is encouraged to squander that tolerance and eat to excess. He may show good results for a while, only to break in the long run.

Though diabetes is generally most severe in the young, the greatest part of the mortality comes in the elderly, because they are by long odds the greatest in number. They do not die of coma, as a rule, but succumb to gangrene, carbuncle, various infections and complications. They in the largest numbers are subject to disabling complications, of which the eye complications are among the most numerous. Those are the things which can be prevented, and which are brought on by these practitioners who encourage patients to tamper with their diet. A still worse class are the practitioners who still indulge in proprietary preparations or various medicines for diabetes, who depend upon medicines when they ought to depend upon rigorous following of diet. In the proportion that these faults are corrected general practitioners will improve in their management of diabetic cases and in the results they achieve.

The simplification of the methods has been carried probably to its highest degree by Dr. Joslin, who submitted such a plan to-day. Chemists also deserve great credit for what they have done in this respect, so that an accurate treatment is actually easier by the present methods than an inaccurate treatment by the methods formerly available.

As to cases of acidosis, you have heard mentioned the methods which are available, and I may add that the nitroprusside test of the blood plasma is one quick test of the danger present. If you get a heavy nitroprusside test in the urine you should do a ferric chloride test. If the latter is slight the acidosis is probably not severe. When there is a black ferric chloride test watch the nitroprusside test of the plasma. These things can be done before there is time for quantitative laboratory reports.

In general, simplification for treatment has its limits. The diet may be prescribed according to some plan such as Dr. Joslin suggested. A mere list of what to eat and what not to eat is inherently fallacious, and frequently harmful. There is no potent drug which the physician gives in a prescription without accurate measure. He would not simply tell a patient to take morphine or to take digitalis. If it is recognized that diet is a potent agency in diabetes to make the patient better or worse, the physician should prescribe diets the same as drugs, telling the patient accurately how much he should take. This may seem difficult in many cases, but in the long run it is best and easiest if you train your patient to calculate his diet in grams and calories. Then you can say "Take ten grams more of protein," or "Diminish the carbohydrate by ten grams." Otherwise you are forced to calculate every diet and almost provide the patient with a set menu for every day. Therefore in the long run accurate measurement of diet is in itself a simplification and merely requires the initial effort on the part of physician to provide such training, and on the part of the patient to accept the training.

I think I should mention, incidentally, that Dr. Joslin and I are agreed upon the limitation of fat. It is true that the diabetic diet consists chiefly of fat, in that most of the calories are derived from fat. The recent suggestions concerning the use of a high fat diet are not new, because high fat diets were long used; but it is my belief that they will result in great harm, because no patient with severe diabetes can be kept for a long period free from sugar and acidosis when the fat of the diet is high and the total calories are high. There is no method whereby you can force such a patient to gain weight and strength when his diabetes is too severe to allow him to do so.

When you are finished with the patient, we know now, by recent study, that you owe some duty to the family. Tests of the blood sugar and the glucose tolerance of the members of the diabetic families show a surprisingly high proportion of cases of either diabetes or what may be called prediabetes. If you will similarly examine obese persons and prescribe simple diets for them, I think you will prevent many cases of diabetes. That, after all, is one of the chief purposes of medicine.

Likewise, regarding the ocular complications, I think here also the latest laboratory methods should be applied. Whether a patient with retinitis is known to have diabetes, or nephritis, or not, his blood should be tested, either after meals or after test doses of glucose. The origin is frequently indicated by the blood test. When there is no known etiology for the ocular condition, that trouble which in the past has been called so often auto-intoxication will in a large proportion of cases simmer down to one of two things: the trouble is either with sugar or with salt; and by recognizing or eliminating these two causes of trouble many of these obscure ocular conditions can be benefited by appropriate diets.

Dr. O. H. Perry Pepper (Philadelphia): To the physician who is attempting to keep abreast with scientific advancement and make use of the various helps that are offered him there seem always to be two factions at war with one another. First, there is a faction, which we will call the powers of darkness, who seem to be bent on discrediting the old, apparently reliable measures that have become familiar, and who offer as substitutes new measures which are complex, unfamiliar and beyond the limits of practical applications; second, the powers of light, who attempt to bring order out of chaos and simplicity out of complexity. In this group belongs Dr. Snowden's paper and I assure you it is much more difficult to prepare and present such a paper than to expound a new hypothesis or explode an old one.

This is no slur on Dr. Joslin and Dr. Allen, for they have done both. Nor must it be forgotten that before a paper like Dr. Snowden's can be written, a vast amount of research, observation and investigation has to be done and re-done. In no field better than in that of diabetes can the value of team work be seen. Animal experimentation, laboratory investigation, clinical observation have all played a part. Furthermore, remember that it is equally true of scientific advancement that it is always darkest just before the dawn.

No small part of our success to-day in the treatment of this disease is due to improved chemical methods. It seems a long way perhaps from the devising of a new reagent or a bit of glass apparatus to the determination of the life-saving diet or the appropriate dose of soda for a patient sick with diabetes.

Dr. Snowden says that until a cure is thoroughly understood, tests of the urine should be made from the twenty-four hour collection and that after tolerance is established and the urine being examined daily, a sample taken one or two hours after the evening meal is sufficient. Of course there are conditions under which it is difficult or impossible to obtain twenty-four hour collections, but unless the difficulty is great it is my opinion that every effort should be made to perform all tests on such a mixed sample. I would prefer to examine a complete twenty-four-hour specimen every third day than a single voiding daily.

There is always a danger in trying to simplify too much, and I feel very strongly that a diabetic can be properly treated on the evidence presented by either frequent blood sugar estimations or by frequent examinations of the twenty-four-hour urine, but seldom if ever will single specimens give sufficient information.

Concerning the blood sugar threshold I was interested to hear Dr. Snowden place it as low as he did. He said, I think, 0.14% or 0.16%; the figure more often given is 0.17%. This is of no vital importance.

Dr. Snowden advocates the method devised by Sellards for the recognition of acidosis. This is admittedly a rough method and may be seriously interfered with if the alcohol used is not actually pure. Often the alcohol contains acid which throws the results of the test out.

The importance of an estimation of the degree of acidosis is in part necessary for the control of treatment. If one decides that it is wise to give alkali one wishes to give the proper dose. To determine this dose various methods have been advocated, some of which are complex and some inaccurate. Palmer, Salversen and Jackson have recently suggested a very simple method which, after a little experience, can be carried out by any physician. It depends upon the recognition of the earliest change produced in the hydrogen ion concertration of the urine by the alkali administered. This is observed, not by the actual determination of the hydrogen ion concentration of the specimens of urine before and after the alkali is given, but simply by a color comparison of one specimen with another.

Finally, when resorting to simple methods one must always beware of possible pitfalls. We must remember the frequency with which lactose appears in the urine in pregnancy, and the occurrence of that little understood condition which is named "renal glycosuria." The irregular occurrence of glycosuria, without any adequate rise in blood sugar and apparently independent of diet, characterizes this peculiar condition. We must also remember to be constantly on the lookout for hints obtained from our tests, that our patient is through error or dishonesty not adhering to the diet we have ordered.

The successful handling of diabetes is a matter of an infinite ability to take care of details. Until every detail is considered there is usually something wrong. It is as an aid in such detailed study and treatment of diabetes that a paper such as this one of Dr. Snowden's is of such tremendous value.

Dr. Fred Fisher (Erie): I should like to take this opportunity to appeal for the more routine examination of urine. We have all seen cases that have come to the operation table or have come to the hospital for examination relative to operation, cases that have had gangrene or even developing coma, that have been seen by numbers of physicians and the diagnosis of diabetes has not been made. Now, they were not diagnosed simply on account of undue haste and not because of lack of ability or knowledge. With most of us the patient comes before us with other patients waiting. We take his history, make an examination of the chest and go through the routine examination of the abodmen; but how often will we ask for their urine or tell them to bring it back another time? We so frequently slip up in those cases. Just recently I have seen a case of typical diabetic gangrene that was seen by a dozen really good men and the correct diagnosis was not made because they did not have the urine tested for sugar. The urine examination was not made, or if made, possibly a little nitric acid got into it, or it was boiled to determine whether there was albumin in it, or perhaps it was looked at through the microscope, but no test for sugar was done because it was considered not necessary. This I am convinced is frequently the case where cardinal symptoms of advanced diabetes are absent.

We have been told that we have one million cases of diabetes in this country. That means one in every hundred persons. But not all of these million are sick individuals, so the percentage of cases coming to us, who have sugar in their urine is much higher than one in a hundred. A large number of patients coming to us with apparently trivial complaints have really a serious condition starting with them. If we are to gain anything in our fight with diabetes we have to do the same as with tuberculosis or cancer—make an early diagnosis and begin treatment early. Early treatment is much better than doing a cataract operation when the lenses of the eyes are useless, or amputating a limb because of gangrene.

Dr. S. Lewis Ziegler (Philadelphia): I have only a word to add to this discussion. My experience has been gained through ophthalmology, but I shall not discuss ophthalmology. Instead I will make three suggestions of practical import:

First, in cataract operations, as Dr. Weisser has stated, the possibility of suppuration is great and we have to be very careful. These cataracts, when found in diabetic patients, are not necessarily from the diabetic condition. If, however, they come for operation with two or three per cent of sugar in the urine, we must reduce this percentage in order to avoid suppuration. During the past twenty years I have always used Clemens' solution of the arsenite of bromine to accomplish this, is a dosage of from three to five drops, three times a day. When there has been two to three per cent of sugar I have been able to reduce it in two weeks to one-half of one per cent. You can then safely proceed with your operation. I think that is a valuable therapeutic fact to possess. I cannot state positively that arsenite of bromine will always effect a cure, because I do not follow up these cases. I do know, however, that it cured one case, a colored cook in my own family, and you know you can't limit the diet of a colored cook. She would eat whatever she wished to eat, but she took her Clemens' solution regularly for about five years. She lived ten years from the time she first had her attack, was safely operated on for cataract, and died from another disease.

The second suggestion is the one I made in my paper on wood alcohol before the General Session on Monday last, the possibility that Dr. Pepper referred to, that of a false diagnosis of diabetes in wood alcohol workers because formic acid in the urine will reduce Fehling's solution. This is especially confusing if there is any disturbance of vision, which might be ascribed to diabetes instead of wood alcohol.

The third suggestion is to avoid the administration of ether is cases of acidosis, as the result may prove fatal. In my own experience I have seen but one such case die from ether. It was not under my own hand, but unfortunately the urine had not been examined and diabetes had not been suspected. I would not give ether in any case of confirmed acidosis or diabetes.

Dr. A. Sterling (Philadelphia): Dr. Joslin states that he does not use any alkalis and has not used them for five years. In another paper it was remarked that it was desirable to have the urine acid-free. I should like to ask Dr. Joslin how it may be kept acid-free without the induction of alkali into the system.

Dr. Joslin (in closing): One should make a distinction between keeping the urine "acid-free" and acid in reaction. It should be free from acetone, diacetic acid, B-oxybutyric acid, but not the normal acids. The real reason why I do not give alkalis is well illustrated by the recovery of fifteen cases of diabetes, with acidosis so severe, as determined by the Fridericia test or by the Van Slyke test, that the CO_2 in the breath or blood was at 20 mm. Hg. or below. None of these cases received alkalis. There have been a few isolated reports of cases with marked acidosis that have recovered with alkalis, but I do not know of fifteen other cases, comparable to these fifteen cases in severity, where recovery has occurred with alkalis.

Diabetic patients to-day certainly live half again as long as a decade ago. I think one can say that by and large the average life of a diabetic patient, counting all ages, could be put at seven years. Formerly it was between three and five years. Yet though life has been prolonged and those of advanced years are more liable to troubles with the eye, and though longer life means a longer duration of the disease, yet Dr. Weisser has cheered us by saying that eye complications are less common. Dr. Allen confirmed his statement, and I can also.

Dr. Snowden's paper interested me very much. There is great danger in the interpretation of blood sugar tests. The way I protect myself is by having a group of blood sugar tests performed, and thus I can compare the different results and gain a hint as to whether errors are creeping into technic. One must be very careful in drawing conclusions from few results. With one statement of Dr. Snowden's I should like to be in agreement, but I am almost afraid to be. That is, can one say that in diabetes the blood sugar is always above normal? I should like to think so, but the border-line between renal glycosuria and diabetes is so close that we must be very cautious.

A question was proposed to me that, if the chairman would allow me, I should also like to put to Dr. Allen, because I think he would like to answer it. In a book which was published, bearing his name but not inspired by him, the impression was given that he used large doses of alcohol in his treatment of diabetes. I give alcohol to none of my patients, and I am under the impression that he follows the same practice.

I have had a regiment of diabetic patients (war strength). Of that number at least half are dead. I cannot claim to have cured one case—at least, as yet. I would not say I had cured one case. To this war-strength regiment of diabetics I have given no drugs.

Dr. Allen (in closing): It is explained in the clinical monograph from the Rockefeller Institute that the use of alcohol was only a makeshift for extremely weak and emaciated patients, very close to coma. We had to treat them rigidly in order to do anything, and we feared to employ absolute fasting because of the weakness. Therefore the makeshift was adopted, while they were fasting, of giving them quantities of alcohol in the form of whisky or brandy to keep up their strength. That was used in the institute only temporarily, during the period of starvation and very low diet, for these few patients. We soon found it unnecessary and dropped it, and since then alcohol has played no part in the treatment. I am using no alcohol now and Dr. Joslin is not. Somehow it caught peoples' fancy and was described as a "whisky treatment," but it has no place in our routine.

Dr. Weisser (in closing): With reference to these sixty-four cases, seen at the St. Francis Hospital, I should like to add that they were older cases, and we now have a number of later ones. During the time I was preparing this paper, the records of the later cases were in the hands of the binders. Later on I could supplement what I have stated about these sixty-four cases with a report on the others.

Dr. Snowden (in closing): I have practically nothing to add. I thank Dr. Pepper for his kindly remarks, and I am sure that any slight differences we may have in regard to single specimens or twenty-four hour specimens may be conceded.

THE DIAGNOSIS OF PORTAL CIRRHOSIS

REPORT OF CASE*

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CHESTER

It is not always an easy matter to diagnose cirrhosis of the liver, for like the malignant invasions of the body, the onset is so insidious and the manifestations appear so innocent, that one should not feel chagrined if the condition goes unrecognized for a time.

In the cases seen early, with hematemesis and symptoms of gastro-intestinal disturbance, even when associated with chronic alcoholism, irrelevant features may so mask the more definite signs as to make a diagnosis dffiicult. Often, at this time, we may detect only the enlarged spleen and considered the case one of the chronic splenomegalies. Later in the course of the disease, on account of ascites or flatulence of the intestine, it may be difficult to determine whether the liver is enlarged or decreased in size. If a mass is outlined one may be unable to say whether it is a grave malignant growth or some inflammatory exudate dependent upon the liver condition. So in consideration of the real diagnostic points that we have to depend on, it is not so surprising, as Cabot remarks, "That a correct diagnosis was made in 39 per cent of a series of 80 cases."

In the diagnosis of *portal cirrhosis,* the thought occurs that if we accept the dictum of early hypertrophy of the liver, followed by a decrease in size as true, it may interfere with the differentiation from *biliary cirrhosis.* The rarity of Hanot's cirrhosis, however, even without considering age, etiology and extent of jaundice, would favor the diagnosis of portal cirrhosis, though the true condition might only be proved after death.

Hematemesis is such an early and frequent symptom that it assumes great importance in the early diagnosis of portal cirrhosis. It occurs more frequently than in gastric ulcer; the proportion has been given as 26 per cent in cirrhosis as compared to 20 per cent in ulcer of the stomach.

The liver outline may be difficult to obtain on account of abdominal distension and one may think he feels a roughened liver, which is more likely deposits of abdominal fat. However, if the liver can be palpated, feels hard, and a sharp lower border can be made out, it is a strong indication of portal cirrhosis.

Ascites is the most constant and dependable of all the symptoms in this condition, occurring in 50 per cent of all cases, and in 85 per cent of these proving fatal. Ascites may come on suddenly following a blow, after exposure, or it may be masked by tympanites. The abdominal enlargement is at first anteroposterior, with shifting dullness into the flanks, which gradually bulge. With the increasing abdominal tension, the veins running from the middle of the groin to the hypochondria become prominent from pressure on the inferior vena cava. They diminish greatly in size after tapping. When distension is great there is some abdominal pain but it is promptly relieved by tapping. The dyspnea, dyspepsia, constipation and diminution in the flow of urine, are all mechanical effects of the ascites. When ascites comes on late without evidence of chronic peritonitis, it is usually a terminal event. But most cases of early and persistent ascites and those which last over a long period, show chronic peritonitis. This fact is a strong argument in favor of syphilis being a factor in the disease. The frequency of syphilis accompanying cirrhosis of the liver is significant and has led some to believe that there is an intimate relation between the two. In fact Letulle is of the opinion that ordinary cirrhosis may be due directly to syphilis.

Tuberculosis is so often associated with cirrhosis, that it must be considered; but here, with the involvement of the peritoneum, there would be considerable pain with accompanying fever. It is interesting to note that the cause of death in 13 per cent of persons dying with cirrhosis is attributed to tuberculosis. In malignant disease of the liver, we would expect to have more pain, with glandular enlargement, especially over the clavicles.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

On account of the several interesting as well as typical features, the following case is presented:

E. R., American, white man, aged 42, a bricklayer, was admitted to Chester Hospital, December 4, 1920. He complained of swelling and pain in abdomen, and marked constipation. He had been a patient in this institution several times. There was no record of interest, except that of August, 1918, when a positive Wassermann was reported. He had had no antisyphilitic treatment at that time nor has he received any since. His family history discloses nothing of interest. He had been a heavy, steady drinker for years, when in 1905 he began having spells of nausea, and vomiting large amounts of blood, this being followed in a short time by enlargement of the abdomen. During the following year he was tapped several times. April 29, 1907, he consulted Dr. M. H. Fussell, on account of the hemorrhage from his stomach. Dr. Fussell very kindly sent me the following notes from his case record:

"He had had a hemorrhage from his stomach seven months before. He had vomiting which had appeared suddenly. His legs began to swell. His abdomen swelled and he had been tapped six times. His abdomen was much distended and contained liquid at the time of the examination. The only blood examination made at that time was a hemoglobin estimation, which was 28 per cent."

Between the years 1907 and 1910 he was tapped 37 times. Since that time, a period of ten years, he has not been tapped and apparently has had no fluid in the abdomen, but his legs have been swollen many times. After a rest in bed for a few days they would return to nearly normal. During these years he was a steady, persistent drinker of spiritous liquor, mostly gin. After his admission, December 4, 1920, on account of the abdominal distension he was tapped but no fluid was obtained.

Physical examination: Patient was an undersized man, poorly nourished, with a yellowish, muddy complexion, slightly prominent eyes, teeth in poor condition, head and neck normal. Examination of lungs showed nothing abnormal. Heart examination revealed a blowing systolic murmur, heard best over aortic area. Abdomen was very large, showing scars of tappings. Distended veins were observed, extending from the groins upward over the abdomen. Filling the abdomen on the left side to two inches below the level of the umbilicus and passing up to the middle of the tenth rib on the right side could be felt a huge mass, with an uneven nodular surface. A distinct edge could be felt along the lower border of the enlargement.

The blood examination revealed: Red cells 1,710,000; white cells 5,000; and hemoglobin 30 per cent. Of the white cells, 80 per cent were neutrophiles, 17 per cent lymphocytes, 2 per cent basophiles and 1 per cent eosinophiles. There was an occasional neucleated red cell and a marked poikilocytosis.

The urine showed a heavy cloud of albumin, and contained hyaline and granular casts, many erythrocytes, leucocytes and epithelial cells.

The Wassermann reaction was negative on four antigens.

Two roentgenologic reports were made by Dr. W. E. Egbert; the first was "greatly enlarged liver and spleen" and in the second report Dr. Egbert said: "This is an enlarged liver shadow over the entire upper abdomen."

The patient grew gradually weaker, becoming toxic, and died December 21, 1920, in uremic convulsions.

Necropsy report: The heart showed marked dilation on right side but no valvular lesion. The lungs revealed nothing of interest, except the right, which was quite firmly adherent to the pleura throughout.

The liver was very small, weighing 905 grams, light yellow in color and covered with round-top nodules.

The spleen was markedly enlarged, about four times the normal size and was found pushed well up toward the axilla extending very little below the ribs. The abdomen was filled with a dense mass of adhesions in which were closely matted omentum, messentery, intestines, pancreas and parts of the kidneys.

Pathologic findings (By Dr. George B. Sickel):

Liver: Weight 905 grams. The organ is grayish, surface is very rough and covered with nodules. The right lobe is smaller than the left and there is a marked constriction between the lobes. Right lobe measures 13x13x7 cm. and the left is 16x10x5 cm. On section the substance is very hard, the capsule is thickened and the cut surface shows areas of normal-looking liver tissue projecting between grayish areas.

Microscopically: There is a marked increase in the interlobular connective tissue, with patches of liver cells between. The individual cells are not markedly altered in shape, but are typically arranged. In some lobules no central vein is seen, and the normal relation to the vessels has been lost. The spleen weighs 870 grams, size 19x13x9 cm. The organ is soft and flabby, grayish in color with pink areas on the superior and posterior surfaces. Microscopically the spleen shows congestion, hyperplasia and fibrosis. The malpighian bodies are not affected as in Banti's disease. The kidneys show changes incident to chronic interstitial nephritis. The lungs show no evidence of tuberculosis. The heart shows marked myocardial degeneration. The points featured in this case are a very small liver, an exceptionally large spleen, early ascites lasting several years, with the establishment of collateral circulation following the numerous tappings, and the great abdominal mass that clouded the clinical picture.

COMMENT

We should try to make a diagnosis of cirrhosis of the liver early, so the life of the patient may be outlined accordingly.

The sudden onset of hematemesis in chronic alcoholics with a history of gastro-intestinal upset should suggest portal cirrhosis.

Since syphilis is found to be so frequently associated with cirrhosis of the liver, a Wassermann reaction will be of great value when the liver is apparently affected.

With the presence of ascites in a chronic abdominal condition, and the other clinical signs being uncertain, the weight of evidence is toward cirrhosis of the liver.

The estimation of the size of the liver by abdominal examination is unreliable, due to the flatulence of the intestine and the ascites, but is of great value if obtainable.

In our endeavors to reach a conclusion we are liable to press the roentgenologist unduly for a diagnostic interpretation, when it might be better to ask for an object determination report. Then our judgment would not be influenced by an x-ray diagnosis.

DISCUSSION

Dr. Frederick J. Kaltever (Philadelphia): The diagnosis of portal cirrhosis in the ascitic stage is in nearly all cases a comparatively simple matter, but at this time the damage to the liver and other viscera is beyond repair, and treatment, therefore, of little or no avail. Yet, much more attention has been given to the recognition of the symptoms of the advanced period than to the early phenomena. This is true of most diseases. Medical science is deficient in methods for the detection of incipient symptoms, and, until a clearer conception of the early reactions, their causes, mechanism and significance is obtained, no great progress in the diagnosis and treatment at this period, before permanent structural changes develop, can be expected. The recognition of the preascitic stage can in only a few instances be definitely made, and therefore the diagnosis remains one of uncertainty. Nevertheless, this provisional opinion offers a working hypothesis for treatment, while the disease is still subject to successful amendment.

The clinical findings upon which we must rely are: first, reflex symptoms; second, functional symptoms; and third, structural symptoms. The reflex symptoms of cirrhosis are never so striking as those of cholelithiasis, although in all likelihood, the same nerve trunks and centers are concerned in their production. This lack of knowledge is due largely to the fact that clinical investigation in this field has been neglected. The stimuli responsible for the reflexes producing the manifestations of gall-stone disease are fairly well understood, those of liver disease almost unknown. Stretching of the hepatic capsule, so common an occurrence in the early stage of cirrhosis, and caused by congestion and to a less extent perhaps to swelling and hyperplasia of the parenchyma, initiates reflexes, which, in all likelihood, account for much of the early dyspepsia. In a like manner, the pain or a sense of fullness or weight, or discomfort referred over the right upper abdominal quadrant and the epigastrium (frequently an early complaint), can be explained. The slight muscular hyperalgesia over this region, and, in some cases, slight rigidity of the upper half of the right rectus, can be ascribed to liver enlargement. Gastric and intestinal indigestion is in part due to other factors, as the immediate effect of the noxious agent acting upon stomach and bowels. It is remarkable that so little attention has been given to solving the problems of reflex disturbances of the liver.

The derangements in the function of the organ occasioned by the action of the pathogenic agent are not well understood. Such symptoms as headache, vertigo, general muscular asthenia, loss of weight, pruritis, pretibial edema, splenic enlargement, epistaxis, and rarely jaundice, appear to be due to disordered hepatic function, but the mechanism of their production is obscure. A recognition and correct interpretation of functional symptoms will afford strong evidence in the early diagnosis of this morbid process.

The early structural symptom which is of great value in the diagnosis is slight hepatic enlargement. This clinical feature is common, but unfortunately, frequently overlooked, because systematic studies are not made of all cases. The liver fluctuates in size at short intervals, a sign ascribed to congestion and cellular hyperplasia and swelling.

The present status of the diagnosis of the preascitic period is one of probability, and depends upon the history of the case, coupled with the common occurrence of indigestion, dull pain, or a sense of heaviness over the right hypochondrium and epigastrium, muscular hyperalgesia, and slight muscular spasm—expressions of altered reflexes—; less frequently disturbances of mental power, general weakness, headache, itching of the skin, epistaxis, splenic enlargement, vertigo, pretibial edema—which might find an explanation in hepatic inadequacy—; sometimes early hematemesis, and enlargement of the organ at first of a temporary nature.

Dr. Frank Alleman (Lancaster): There are just a couple of points that I should like to bring out in connection with this interesting subject. Dr. Simpson has read a splendid paper, showing you just what portal cirrhosis means. Dr. Kalteyer has called attention to the importance of early diagnosis. Now you all know that early diagnosis of portal cirrhosis, as he suggested, is a probability only. I want to call attention to one or two points in this connection.

In the first place, the pathology of portal cirrhosis is essentially a fibrosis, due to a toxemia or to some chemical irritation passing up the portal system. After the fibrosis is established, what are you going to do about it? I have never seen a case in which the patient was not told that he had cirrhosis of the liver and was then tapped. Are we to go on tapping these cases? I am going to digress from the subject of diagnosis, because that has been covered. We simply tap these patients until they die; and the more you tap them, the more you have to.

It has been suggested that if you cannot diagnose the case in the early stages, you should turn it over to the surgeon and let him do an exploratory laparotomy and see whether there is essential cirrhosis or a condition that has started somewhere else in the abdominal cavity. I believe that exploratory operation is justified in these circumstances. It gives the surgeon a chance to do an omentopexy and do what he can with the condition.

There is one little point that I forgot to mention in connection with early diagnosis, and that is this: There is a sort of accessory compensatory circulation established between the coronary veins and the veins reaching along the esophagus, and likewise down in the lower abdominal parietes, along the omphalomesenteric cord. Now why not, if you want to perfect the diagnosis early, have the esophagoscope passed down, to see whether the patient has any beginning esophageal piles, so called? Why not make a thorough rectal examination, to see whether there is a congestion of the veins in that region, in connection with the other symptoms?

Dr. J. Quincy Thomas (Conshohocken): Dr. Simpson's paper is very interesting because the case which he reports had a positive Wassermann and was not treated for syphilis. The diagnosis of biliary cirrhosis sometimes is most difficult. The patient's history is a very important matter. A patient who is acknowledged to be an alcoholic and who complains of marked digestive disturbances, would cause one immediately to think of an alcoholic cirrhosis. It seems to me that the important thing to do in this given case was immediately to treat this patient for syphilis by large doses of potassium iodide, and inunctions of mercury, or possibly salvarsan, because we do not know how much syphilis is the cause of the cirrhosis.

It is a well-known fact that alcoholics develop cirrhosis of the liver quite frequently, but we do find true cirrhosis sometimes in those who live apparently hygienic lives. Occasionally this disease will follow infections or intoxications arising from unknown and unsuspected sources.

Passing the esophagoscope in these cases sometimes might be very dangerous because you might rupture distended veins in the lower esophagus. I once saw such a case in a postgraduate hospital where a hemorrhage was almost uncontrollable.

Much light has been thrown upon diseases of the liver and biliary passages during the last three years by the Lyon method of studying the biliary secretions and excretions. It is possible that infections of the biliary system may travel up into the liver from the gall ducts and produce biliary cirrhosis. This has been proved by Dr. Lyon and his co-workers, on this subject. So any given case of jaundice or liver disturbances should be studied by the Lyon method.

The prognosis of biliary cirrhosis is very grave. If we have syphilitic cirrhosis, then antisyphilitic treatment does much good. Cirrhosis of an unknown cause is almost incurable.

Dr. Simpson (in closing): I wish to say just a word regarding a few ideas that were brought out concerning the method of outlining the liver. If a liver is enlarged from any one of the many causes, such as biliary cirrhosis, or is enlarged from cardiac conditions or other acute causes, the lower border of the liver will usually be blunt, and the percussion note and the palpable border will be the same; while in portal cirrhosis, the lower border of the liver will be thin and the palpable border will be much lower than the percussion. If the lower border can be determined and you get the upper border of the liver at the usual line of between the sixth and the seventh rib, you know that the liver is enlarged as would be found in the early period of portal cirrhosis.

Regarding the pathology of portal cirrhosis, it is, as we understand, a fibrosis; and the fibrosis is caused by some poison—sometimes a microörganism, but usually some poison. If the poison is alcohol, certainly if the alcohol is removed, the cause is removed. If this is done early, I should think that this would influence the prognosis of the condition favorably. Regarding this case, we reported that an early Wassermann was positive, that the patient had received no antisyphilitic treatment, and that he received none afterwards. That was the history that came in with the case as to previous work done. Later on we had a Wassermann made in the hospital by what we considered a better method. That was negative throughout, so it is a question whether the first Wassermann was positive or not. It does not prove, in this case, that it was a syphilitic infection; but I think that in all such cases, if you do get a positive Wassermann with an indication of liver involvement, antisyphilitic treatment is certainly indicated.

A BRIEF CONSIDERATION OF NON-SURGICAL GALL TRACT DRAINAGE AS AN AID TO THE SURGEON*

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PHILADELPHIA

The method of nonsurgical duodeno-biliary drainage of the gall tract is nearing its fifth birthday. It has had to fight for recognition from the surgical side of our profession, and has more slowly gained a friendly reception from this group than from those men who are interested in the problems of internal medicine or surgery which involve the upper right quadrant, but who themselves do not wield the trusty scalpel. The pen is mightier than the sword, but only if it writes the truth fearlessly and persistently even in the face of powerful opposition.

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Since this method of nonsurgically attacking gall tract problems diagnostically and therapeutically was formally presented in September, 1919, a series of papers has been published outlining the principles upon which this method is based, carrying the subject through the technique which we urge should be adhered to for safeguarding more accurate differential diagnosis, emphasizing again and again the need of earlier diagnosis of gall tract disease which can be obtained by this method, calling attention to the possibilities of preventing gall stones and late gall tract pathology, and, finally, giving a classification of the group of gall bladder, gall duct and liver disease in which it has a proper field of practical therapeutics.

At first the field of treatment by this method was approached with a properly cautious conservatism until our experience grew and our records developed some really brilliant recoveries. Now much more can appropriately be said. During these two years this method has been carefully watched, freely discussed and criticized, and finally widely adopted. The literature of the past year has testified to the growing interest of and the encouraging results obtained by those men who have given thoughtful consideration to it. Most men more recently writing on this subject have confirmed the soundness of the principles upon which this method of diagnosis and treatment rests. Some have not. We believe it is pertinent, although we regret to say that those who have not are attempting to draw counterconclusions from a misinterpretation of their findings, based upon series of cases too small to permit them to recognize their errors, or because they have attempted to modify the original technique, usually in the direction of shortening the time and lessening the labor involved in the diagnostic or the therapeutic drainage. In other words, they are not really doing a diagnostic drainage as it should be done to obtain the maximum diagnostic evidence. This method cannot be diagnostically simplified without grave danger of error. In the future it may have to be still further elaborated.

Fundamentally this method falls within the field of gastro-enterology, and gastro-enterology in turn must be the handmaiden of a sound and extensive general clinical knowledge which has grown out of preliminary years of work in the laboratory, out-patient service, hospital wards and private practice. The diagnostics of this kind of work can be best developed by the type of gastro-intestinal clinician who has a sound scheme of general and special diagnosis, who preferably does his own laboratory work, or sees that it is done by personally trained laboratory technicians, and makes a daily point of insisting that all laboratory specimens be examined immediately and that they are routinely tested microscopically, culturally and bacteriologically. You will say this is highly specialized work, and requires unusual specialistic knowledge. This is no field of diagnosis for the tyro, nor can it be simply or successfully done by house doctors or nurses in the wards, and the materials then turned over to the general laboratory technicians, *unless* the various people engaged in this division of labor are properly trained and have a thorough understanding of what each one's part shall be, and unless the whole scheme of such organization is efficiently supervised and coördinated. Much of the criticism that has come about is due to a disregard of the above facts. In diagnosis and treatment in this particular field there is just the same difference between the veriest beginner and the man who by patient day by day plodding has become an expert, as there is between the relatively untrained hospital interne, who may occasionally get away with an acute surgical emergency and the fully rounded surgeon who has acquired a Deaveresque mastery of his art.

Medical internists seeking to accomplish a real success in their nonsurgical management of gastric and duodenal ulcers, gall tract and intestinal disease, which we are now learning must be technically and topically treated, rather than uselessly drugged, would do well to follow the example of you surgeons who have gradually trained your hospital groups to a definite detail of technique, not only in your operating rooms but in your surgical wards.

You are probably familiar with the fundamental principle upon which this method depends and of our classification of "A", "B" and "C" biles from ducts, gall bladder and liver. To review briefly: The fundamental principle was suggested by the late Dr. Meltzer, who found in his experiments on dogs at the Rockefeller Institute that when he douched the duodenum with a solution of magnesium sulphate he would produce a relaxation in the tonicity of the duodenal wall, and thereby relax the sphincter of Oddi and permit the discharge of bile from the common duct into the duodenum, but when this salt was allowed first to pass across the gastric mucosa before reaching the duodenum the above effect was either not produced at all or was distinctly less. The reason for this is now plain. The magnesium sulphate is chemically changed by the acid gastric juices and is no longer magnesium sulphate when it reaches the duodenum.

There are other chemicals that will produce bile expulsion from the ducts and liver, such as peptones, hydrochloric acid, sodium sulphate and phosphate, calomel and other cholagogues, hot normal salt solution, or even hot water, but none of these solutions will expel gall bladder bile so well or so consistently as will magnesium sulphate. Hence the previous failure of these drugs in the medical management of gall tract disease. They were inadequate to cure or even to arrest for long the progress of gall tract disease. Therefore these cases fell by common consent into the field of surgery.

The first cholecystotomy was performed by Dr. Bobs of Indianapolis, in the late sixties of the Nineteenth Century, and taken up soon after by Dr. J. Marion Sims. With this as a starting point, and thanks to the pioneering efforts of you surgeons during the past fifty, but more particularly during the past twenty years, the results achieved have been brilliant. Much has been accomplished in conquering gall tract disease. Much more still remains to be done. Many of you are now frankly disappointed with the present status of surgery in this difficult field. The mortality rate has steadily been decreased from 50 to 10 and even to 5 per cent in the best surgical clinics; but still far too many surgical cases relapse for various reasons, and reoperations are too frequently required, often with worse results. Very little has been accomplished until recently in the *prevention* of gall tract disease, due to our previous inability to diagnose it in its incipiency. Following Meltzer's discovery of the local effect of magnesium sulphate applied to the duodenum we found this principle could be successfully carried out by means of the duodenal tube. Medical interest has been revived and medical industry has proved it possible to diagnose gall tract disease accurately in its early stages and to treat it successfully. Prevention of serious late gall tract pathology, due to infection and stasis, with adhesions, stone formation and cancer, becomes more nearly within our grasp. Closely wrapped up in this field are problems concerning certain diseases of the pancreas, the spleen, the liver and the major gastro-intestinal tract which we are hopeful of solving. The field is open, but there is a shortage of labor. Much clinical experimental help in the solving of these problems can come from you surgeons. Here our fields closely touch one another. What we need now is open-mindedness and a closer and more sympathetic coöperation between physician and surgeon for the common interest of our patients.

The purpose of this communication, presented before this gathering composed largely of surgeons, is to attempt to show the help which this method offers you in your everyday problems of gall tract disease: First, the advantages of a more intimate and accurate preoperative diagnosis—a better foreknowledge of what you may find at the operating table. Second, a better chance of selecting those cases for whom surgery is imperatively indicated and those cases for whom surgery is contraindicated, but for whom this method of drainage can be made an alternative measure with reasonable hope of success. Third, the selection of cases on whom this method may be temporarily used to improve the surgical risk or to tide them over a temporary surgical contraindication. Fourth, the selection of those patients who may postoperatively be protected against surgical failure by a continuation of their drainage by this means beyond that secured for them by surgery alone.

Having completed a diagnostic drainage, or several of them if necessary, we first decide whether the case is emphatically and unquestionably surgical and nothing else, or if we can prove by this diagnostic test that we can secure an efficient medical drainage of "A", "B" and "C" biles, we are then in a position to offer an alternative plan of treatment. Next we review the diagnostic details. If we find and can prove that the ducts, as well as the gall bladder, are infected and catarrhal, we urge a period of medical drainage be carried out for several weeks in order better to prepare the patient for subsequent operation. Especially is this true if the patient is jaundiced. We are at present carrying out this plan at the Methodist Hospital on a toxic, deeply jaundiced patient with an impacted ball valve stone in his common duct. After the stone impaction was released, we succeeded in recovering after twenty-six hours' drainage four and a half litres of a dark, mixed, unsegregated bile, containing very viscid, stringy and lumpy plugs of mucopus and inflammatory debris, and secured a marked decrease of his jaundice and easement in his pain in twenty-four hours. By this means we withdraw from the body large quantities of poisoned bile just as you do in a cholecystostomy, and lessen the toxic dose that is being carried by the blood to heart muscle, kidneys and liver cells, and also protect the intestinal tract against transplanted infection. This unquestionably should be a help to you surgeons in still further reducing your operative mortality.

Secondly, we recommend, and in our practice, insist that all cases operated be given a medical drainage six to eight weeks later to determine whether operation has given a maximum satisfactory result, or whether medical postoperative drainage should be carried on for a few weeks to take care of residual duct infection and prevent the necessity of reoperations, which are now so frequent and so trying to surgical skill. Thus by combining our two methods of attack, we can continue the principles of free drainage of infected and inflamed gall tracts beyond the time limits usually defined by surgical measures alone. Indeed in cases of our own, in which we find the ducts infected prior to operation, we will begin postoperative medical drainage at the end of the third week. This not only helps to cure the gall tract disease, but protects the intestinal tract against transplanted infection, a not infrequent postsurgical sequela.

Thirdly, we can now offer an alternative method of gall tract drainage in cases in which there are grave surgical contraindications, such as severe myocarditis, nephritis, hepatic cirrhosis, diabetes, hyperthyroidism, gall tract disease complicating acute infectious fevers (such as typhoid cholecystitis), pernicious or grave secondary anemias or hemolytic jaundice with splenomegaly, the asthenic visceroptotics with gall tract infection and biliary stasis and empyema in the aged or very feeble patient. None of these is a good operative risk, yet heretofore nothing of practical value could be done for them. We have had some experience with each of these groups and have scored some very remarkable successes, and some have been successfully operated upon subsequently with no mortality as yet.

Fourthly, we have succeeded in closing up by medical drainage, coupled with autogenous vaccine therapy, several postoperative persistent biliary fistulæ, one of eight years' duration, where previous surgery had failed.

Finally, this method has achieved a very considerable success in the treatment of certain medical conditions in which you surgeons are not directly interested. We refer to biliary migraine, to biliary cirrhosis with or without intestinal autotoxemia, to catarrhal jaundice, to chronic arthritis with a low grade focus of infection in the gall tract and intestines, but in whom teeth, tonsil and sinus foci have been removed without improvement, to the clearing up of typhoid carriers, to gall tract poisoning associated with the severe anemias.[1] We are at present engaged on the problem of diabetes, adding gall tract drainage and thereby pancreatic drainage, to the accepted dietetic principles laid down by Joslin, Allen and others, and can say we have had certain results that make us hopeful of improving the status of diabetic management.

You will say, "How can you do all these things when there is still some controversy as to whether you can actually drain the gall bladder, granting that you *can* drain the ducts and liver?" We can answer this criticism satisfactorily in detail to any of you who are sufficiently interested to review the facts.[2] Now is not the time or place. However, we can positively state that the representations of Einhorn, recently published, that the dark bile, our so-called "B" or gall bladder bile, is not really gall bladder bile, and is produced by an undefined action of the liver upon the sulphate radical of the magnesium salt, can be easily proved to be incorrect, and that his contention is a result of insufficient observation coupled with false deductions.

In the first place, in our personal work we do not allow the magnesium sulphate to be retained, but use it largely for the purpose of stimulation only and recover by gravity siphonage from 60 to 80 per cent of the amount introduced, so that, as a rule, the amount retained is small. Secondly, we do not get an increased amount of the dark bile in proportion to the amount of magnesium sulphate retained. Thirdly, in not a few instances we will recover dark bile in a sudden gush without using any magnesium sulphate or any other chemical. These cases are comparatively rarely seen, occur in patients presenting clinical symptoms suggestive of gall bladder distension or in jaundiced patients without complete bile obstruction, and in both of these groups of cases the gastric acidity has been high and more frequently than usual is discharging spurts of this high acid gastric juice into the duodenum. This is in accord with the theory of the hormonic effect of the gastric fluid which is augmented further when acting upon proteins. Fourthly, in the great majority of the cholecystectomized patients included in our studies we do not recover any of the dark "B" bile, but only "A" and "C", and only the latter if the sphincter of Oddi is no longer functioning. In the occasional cholecystectomized case from whom we have recovered a bile dark enough to resemble "B" bile this phenomenon has occurred only in the cases with jaundice causing biliary obstruction in the finer intrahepatic bile radicles, or it has occurred in cases in which at secondary operations the common and hepatic ducts were found dilated and containing static bile, or in whom diverticuli had occurred. To ascertan and acquire an adequate appreciation of the above facts requires an experience covering several hundred cases. Isolated observations are often dangerous if put on record too soon. Indeed, in the excellent study of the single case of a hepatoduodenostomy, without gall bladder or common duct and with shrunken hepatic ducts just reported by Dunn and Connell, the whole recitation of this case points to a well developed biliary cirrhosis from long continued biliary obstruction and would thus bear out our contention. We believe that Rous has conclusively demonstrated that the gall bladder possesses the function of concentrating liver bile more than any other part of the gall tract. He finds that it will concentrate 10 times its volume of liver bile. This provides the safety valve for the whole system; otherwise rupture of gall bladders would be more apt to occur. But when this functional capacity has been exhausted, some further concentration of bile *can* and does occur in the ducts. In the event of bile obstruction, when the gall bladder has been ablated, its function must be vicariously carried on by the ducts. We are necessarily searching for the truth, and therefore are delighted with each new phase of constructive criticism, but we contend that our fundamental conceptions are sound and need not be shaken by an occasional isolated observation which is put forward and declared to undermine the whole structure.

We should like an answer from still credulous critics to the following questions: If "B" bile, with the above exceptions, is not being derived from the gall bladder, how else can we so well account for our recovery of small gallstones or gallsand directly through the tube, or our recovery of larger stones found in the sieved stool of patients who have recently had duodenobiliary drainage? Are they all coming from the ducts or the liver? How else can we so well account for the reproduction of gall bladder pain, either of a definite colic type or a sense of upper right quadrant soreness or of infrascapular pain (due to adhesions), following certain of our drainages in cases with definitely inflamed and infected gall bladders? How else can we account for our recovery of large quantities of practically pure pus in several of our proved cases of operated empyema of the gall bladder? Is it all coming from the ducts or the liver? How else can we account for the recovery of identical microscopical cytology in our supposedly gall bladder specimens of bile with that recovered directly from the gall bladder at operation or by direct aspiration of bile through persistent biliary fistulas in certain of our sinus cases in whom we have had repeated opportunities to check up on this point? How else can we so well account for not only the symptomatic recovery, often brilliant, of a very large series of patients after a course of nonsurgical biliary drainage, but also for the coincident improvement in, or the final disappearance of the pathological objective, microscopical and cultural findings in such patients?

Lastly, Dr. Sachs, of Nebraska, has succeeded in successfully carrying through an experiment in which we have previously failed. In a recent published paper he reports the following case:

"Mrs. A. H. Referred by Dr. G. Simanek. Medical drainage three days prior to operation showed "A" bile a light golden yellow; "B" bile a dark static bile; "C" bile a light lemon yellow. Through the kindness of Dr. Simanek, I was permitted to pass a duodenal tube in the above patient before she was anesthetized. She was then brought to the operating room anesthetized, and the usual gall bladder incision made. The gall bladder was exposed, and found to be fairly well distended, and before any exploration was made, 50 c.c. of a 33 1-3 per cent solution of magnesium sulphate solution was introduced directly into the duodenum through the duodenal tube. The suction bottles were applied in the usual manner, and in three minutes bile started to flow. In five minutes we started to get a real dark, golden bile (typical "B" bile) and the distended gall bladder gradually collapsed. I might compare this to the collapse of a balloon when the air is released (no contraction was observed). The gall bladder was then removed in the usual manner, and the bile in our collection bottle was apparently the same as that obtained from the removed gall bladder, only in greater dilution."

We sincerely trust that this observation is reliable since it supplies a suggestion of positive proof which has not hitherto been furnished.

For a diagnostic drainage of the gall tract to yield the maximum of reliable information a very definite and careful technique must be followed. Details covered in previous papers cannot again be given here for lack of time. Briefly, however, the oral, esophageal and gastric mucosal surfaces must be properly prepared before intubating the duodenum. In normal cases the tube should pass in twenty minutes from stomach to a point in the duodenum where the common duct empties. Certainly not longer than thirty minutes. In normal and in many pathological cases a longer transit time means poor technique. While fluoroscopic localization of the position of the tip is helpful and offers additional diagnostic information by preoperatively disclosing the "pyloroduodenal angle," it is by no means necessary. Routinely we do not use it. Various clinical tests will provide equally trustworthy evidence. Day in and out, without fluoroscopic aid, our gastro-duodenal transit time is about twenty minutes. In pathological cases where we encountered difficulties in passing through the pylorus into the duodenum we have had to learn means of overcoming them. In most cases we can now succeed. Uncomplicated pylorospasm will yield to atropine, belladonna and occasionally to benzyl benzoate. Pyloric inflammatory edema will subside under bed rest and application of heat or cold. Angulating or partially obstructing adhesions can be passed by adopting various changes of posture, by modifying the weight of our tip, or by attaching a sinker and fish line device, recently worked out by a patient. Where none of these methods suffices we usually find we are dealing with pyloroduodenal obstruction due to new growth or to strangulating adhesions. We have recently had operated two patients with pyloric obstruction and retention vomiting due to dense strangulating adhesions involving pylorus and gall bladder, making it impossible for our tube to enter the duodenum.

Having reached the duodenum, gravity siphonage will recover duodenal fluid. A brief study of its gross and microscopical findings, its chemistry and bacteriology, will quickly yield more accurate diagnostic data for duodenal ulcer or duodenitis, catarrhal exfoliative or infective, than from any other single method. We instantly gain evidence of proper physiological functioning of Oddi's sphincter, which should be closed in the fasting gastroduodenal state. Where we find bile discharging in this interdigestive phase, we lose a certain amount of our deductive evidence in regard to the condition of the common duct, since this bile has escaped. Where, however, we find the common duct sphincter closed, we can usually promptly relax it by douching the duodenal mucosa with a 33 per cent magnesium sulphate solution, which we believe to be the optimum strength to give the best gall bladder evacuating response. Repeated stimulations may be necessary in atonic gall bladders or where the cystic duct is obstructed by catarrh. There is some confusion as to what we mean when we speak of a 33 per cent magnesium sulphate solution. We mean the use of a one-third part of a saturated solution of magnesium sulphate which is equivalent to a 16.6 per cent of the magnesium sulphate salt itself, where the solution is made up in distilled water at 25 degrees centigrade.

We then collect our three types of bile in sterile bottles for diagnostic study. After stimulating with magnesium sulphate, bile begins to appear usually in from one to six minutes, occasionally longer, depending upon the tonicity or spasm of the sphincter, or upon a common duct partially obstructed by catarrh or inflammatory edema. When bile does not appear at all during a period of one or two hours after repeated stimulations and we are certain of the position of the duodenal tip, and our patient is jaundiced, we can at once be sure we are dealing with a complete biliary obstruction. When due to catarrhal jaundice we have frequently unplugged the common duct after two or three treatments, cleared the jaundice in a week's time, and, by shortening its duration, have lessened the danger of damage to pancreas, gall bladder wall and damage to liver cells from biliary cirrhosis. Where obstruction is due to impacted common duct stone by relaxing the duodenal mucosa and Oddi's sphincter we have succeeded in decreasing the inflammatory edema and permitted the stone to bob back into the dilated duct, or, in certain instances, have succeeded in making it pass and have recovered it and other stones in the sieved stool. Where obstruction is due to strangulating adhesions, to pressure from new growth without or within, a few days of repeated stimulation and failure to recover bile will help quickly and accurately to decide this point, and that surgery is the only choice. Recovery of fresh gross bleeding with bile is suggestive of stone trauma or of cancer. Sachs, in an excellent recent review of his experiences with the method, reports "five cases of jaundice with malignant obstruction to the common duct, in which no bile appeared on stimulation, but blood was immediately obtained. Two cases at autopsy proved to be carcinoma of the pancreas; two at operation were carcinomas of the gall bladder extending to the common duct, liver, etc.; one died, refusing autopsy, in which the clinical diagnosis was so evident that I am sure no error could possibly have occurred."

To continue, when bile is recovered from the common duct and from the liver, but no gall bladder bile can be obtained, we can be certain that the cystic duct is obstructed from one of several causes, or the gall bladder is too muscularly atonic to deliver its contents, is contracted around a solitary stone, is shrunken and fibrous or otherwise nonfunctioning. These are facts worth knowing before operation and will often serve to select or modify the operative procedure.

Our method of preoperatively diagnosing the location of adhesions from pylorus, duodenum or hepatic flexure of colon to the gall bladder or to the under surface of liver by auscultatory transmission of the gastric or colonic tuning fork "note" has proved of great help, and its reliability has been repeatedly confirmed by x-ray examination and proved at operation.[3]

We affirm that we can accurately diagnose catarrhal, inflammatory, infected or adhesive states of the common or cystic ducts and of the gall bladder. We can determine the patency of the common, cystic and hepatic ducts. We can, to a certain extent, determine the functional capacity of the gall bladder, certainly its dysfunction. We can preoperatively determine the likelihood of gallstone formation where the x-ray gives us negative evidence or the history is vague or atypical. We can gain direct evidence of the efficiency of pancreatic and hepatic function. These are important diagnostic facts to obtain preoperatively and will improve our prognostic ability. Can we do this in all cases? No. In the majority of cases? Yes. Can we prove these contentions and overcome the skepticism of the credulous? We believe we can if you will come and see, if you will keep an open and impartial mind and be willing to coöperate.

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1. The citation of most of the groups of cases here referred to has appeared in a paper recently published: Amer. J. Med. Sc., Jan. and Feb., 1922, Vol. CLXIII, Nos. 1 and 2.
2. Our reply to antagonistic criticism by Einhorn, Crohn et al, Dunn & Connell, Bassler et al will appear in a forthcoming number of the New York Medical Journal. See also the recent paper by Smithies, Karshner & Oleson: J. A. M. A., Dec. 24, 1921, Vol. 77, No. 26, p. 2036.
3. The description of this diagnostic test will soon appear in Surgery Gynecology and Obstetrics.

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DISCUSSION

Dr. Francis J. Dever (Bethlehem): My interest in what I am pleased to call the Lyon method for the nonsurgical drainage of the biliary tract and gall bladder, dates from the appearance of Dr. Lyon's first paper in September, 1919. Since then I have been working as continuously as suitable cases presented themselves in hospital and in private work. That experience has led me to desire to underscore the statement made by Dr. Lyon in his paper that this is not a technic for the tyro, the nurse, or the intern. That the nurse, intern and inexperienced may obtain bile is known. However, there is a great deal more to this method than the mere appearance of bile in the tube, or the report that is returned from the laboratory. Before condemning the test I suggest that it be given individual study, strict attention being paid to technic, which must be followed with scrupulous care. I am very glad to hear Dr. Lyon say that he is not as keen about the aspirating bottles as in the beginning. Personally, I have discarded them. I think the less suction the more accurate will be the deductions drawn from the microscopic study. If aspiration is done there always comes a doubt as to the origin of the few red cells which may be found in the bile. If that cause of possible traumatism is obviated there are fewer uncertainties to be taken into consideration. I do not agree (though it may be presumptuous to say so) with Dr. Einhorn that the dark bile, called B-bile, is due to the admixture of magnesium sulphate. I think others who have worked with this method likewise will disagree with that statement at once. Now as to the diagnostic value, if one who is experienced fails to obtain B-bile, there probably is a good physical reason for the failure. It has been my experience that in the majority of cases in which no B-bile was obtained, mechanical reasons were found at operation to explain the nonappearance of B-bile. Gallstone colic may be induced by the attempt to secure gall bladder bile. As a rule, a clear history of cholelithiasis is a contraindication to the use of Lyon's method of biliary drainage. Pain may occur during the test even in the absence of gallstones. In a recent case, pain in the region of the gall bladder invariably preceded the appearance of B-bile. At operation the gall bladder contained no stone, but the tip of the gall bladder was attached to adjacent viscera by adhesions.

Dr. John J. Gilbride (Philadelphia): I have not had an extensive experience in this nonsurgical biliary drainage, but as has been stated, it is an aid to surgery and anything that is an aid to surgery, either preoperative or postoperative, I will, of course, always welcome. I have been interested in the subject for a long time and I believe it is of value in surgical diagnosis. In the first place, before this method was introduced, what did we have along these lines? We did not have anything. We examined the feces for bile, etc., but that is all we could do. Now we have the method given to us by Meltzer and its practical application by Dr. Lyon, and though it does not come up to expectations, it contains a kernel which is of value. I can corroborate some statements made by one of the speakers. I recall two cases of cholecystitis in women who refused to have an operation, these women would not return to me until they had a recurrence of symptoms in the right upper abdomen, and each time they would experience temporary relief by biliary drainage through the duodenum, but this was not curing their disease. We know that not only magnesium sulphate and some other substances stimulate the flow of bile, but we know that chyme passing normally from the stomach into the duodenum causes emptying of the gall bladder, that patients with cholecystostomy drain comparatively little during digestion, and that during digestion the bile passes on into the intestine. I shall not enter into the controversy as to whether the gall bladder empties itself in the Meltzer method, as that remains to be proved, but I do know we obtain a varicolored bile—the so-called A, B and C bile. A further study of the chemistry of the bile obtained in this way will throw a great deal more light on the subject and I think we have here a valuable addition to our diagnostic methods for studying biliary disease.

Dr. J. Quincy Thomas (Norristown): We are very much indebted to Dr. Lyon for the fine way in which he has presented this subject to us. Since the Doctor published his first paper on this subject, renewed interest has been taken in diagnosis and treatment of diseases of the gall bladder. As Dr. Lyon has pointed out to us, it is possible for us to differentiate bile coming from the gall bladder and that coming from the ducts and liver. There is absolutely no doubt that the Meltzer-Lyon method of draining the biliary system is a wonderful diagnostic aid if we thoroughly understand the technic and can thoroughly interpret our findings. It is absolutely essential for us to follow Dr. Lyon's technic as he has given it to us, if we want to arrive at any positive and accurate conclusion. The unfortunate part about many of us is that we try improving this method and then when our findings are disappointing we blame it on the method. As someone said this afternoon, if you want to become thoroughly acquainted with this method, visit Dr. Lyon's clinic or study his papers carefully and you will get the exact technic. Then if you do that you will get the same results as Dr. Lyon.

Dr. Gilbride has well said that heretofore we had no accurate method of studying the bile. This method gives us many possibilities. A great deal of criticism has been given this method but it is because we have not followed the exact procedure of Dr. Lyon.

I thoroughly believe that it will be possible now to diagnose a pregallstone stage. When we can recognize this condition we will go a long way to prevent formation of gallstones. The pre-gallstone stage like the pre-cancer stage may be void of any very definite positive symptoms. Moderate attacks of indigestion without frank pain or discomfort may be the beginning of this stage or it may follow any of the infections. There is a great deal of controversy as to whether the gall bladder can be really drained by this method. I thoroughly believe that it can be done. This one clinical factor convinces me that by applying magnesium sulphate according to this method, it will relax the sphincter of the common duct and produce contraction of the gall bladder. Take for example a subacute gall bladder: after the tube is in the duodenum and you have drained the bile from the duodenum and the ducts by applying a solution of magnesium sulphate, you will soon note the patient complaining of pain, and with each gush of bile in the tube the patient will complain of pain similar to a biliary colic. I still remember one patient in which I was required to give a sedative because this pain became so severe. Still another convincing factor showing that the gall bladder can be drained by this method, is the amount of dark bile that runs into your bottle. I recall another patient in whom I was doing biliary drainage for bilious headaches, from whom, after using the magnesium sulphate solution, I recovered from eight (8) to twelve (12) ounces of dark green bile. The amount of bile and the character of the same convinces me that this came from the gall bladder, inasmuch as this patient was very much improved by the removal of this large amount of static bile.

There is a new term which I am going to use to-day; that is, "Hepatic Flushings." In certain conditions in which headaches are ushered in by nausea and vomiting, the patient always says: "Just as soon as I vomit bile I am relieved of my headache." These conditions are termed bilious headaches. Biliary drainage in these cases seems to have a marked beneficial effect. It is in these cases that I claim the results are brought about by draining the excess of bile which accumulates either in the gall bladder or in the liver. Then by this procedure, we relieve the enterohepatic circulation. That is, we prevent the reabsorption of this excess bile. This procedure I term "Hepatic Flushing." A great many of these so-called bilious headaches are relieved over a long period of time by this method. I have one patient who returns about every eight or ten weeks for a biliary drainage. I have tried everything, I have exhausted all other remedies, and this method will actually prevent a bilious headache with nausea and vomiting. The drainage from this patient that I get is about ten to twelve ounces of dark green bile after two stimulations of twenty-five (25) cc., of a fifty per cent (50%) magnesium sulphate solution. I claim that I break up the so-called vicious circle by removing this amount of bile, which cannot be reabsorbed. We may have a biliary hypersecretion. This seems quite logical. The question is now, what becomes of the bile excess if not drained occasionally? It is reabsorbed, taken to the liver and reëliminated. In fact reabsorbed bile is the best stimulant for the liver cell. So we eliminate the excess of bile and relieve the entrohepatic circulation. This applies more to the toxic conditions of the liver. One of the important functions of the stomach is its motility. One of the important functions of the gall bladder is its contractility. As long as we can keep the bile flowing from liver to gall bladder, from gall bladder to duodenum, we have few clinical symptoms. This condition may be brought about by a change in the bile as secreted by the liver cells. There are some physiologists who claim that the liver cell, through disease or a functional disturbance, is unable to secrete normal bile, and this abnormal bile is predisposed to precipitation in the gall bladder, with consequent formation of calculi.

One must remember in using this method that it has its limitations. It is a physical impossibility, as we all well know, to drain gallstones through the cystic or common duct into the duodenum. So it is absolutely useless to attempt to treat this kind of a case by this method.

In early cholecystitis or in simple catarrhal cholecystitis in which the gall bladder is not surrounded by a lot of adhesions and the clinical symptoms are not very severe or of long standing, this method of nonsurgical drainage seems to have a beneficial effect on this kind of case. In the chronic cases of cholecystitis, in which the gall bladder walls have undergone a marked change from inflammatory conditions and where adhesions are likewise producing symptoms, even though you can drain the biliary tract and gall bladder, this nonsurgical procedure has little effect on the pathological condition of the gall bladder. In certain cases of chronic cholecystitis in which the patient is a very poor operative risk, this nonsurgical drainage has a temporarily beneficial effect and will lessen the symptoms materially.

We must always keep in mind, in dealing with these cases of chronic cholecystitis, that we have likewise a chronic duodenitis. The duodenitis may be causing as many symptoms as the gall bladder condition. This method of drainage, with its accompanying washing of the duodenum, will ofttimes relieve the clinical symptoms.

In conclusion let me say again, let us study this method as carefully as Dr. Lyon has studied it, following exactly the technic as Dr. Lyon has pointed out. Then no doubt we will get unexpected results.

Dr. M. Behrend (Philadelphia): I do not wish to belittle any work Dr. Lyon has done because he has given us a diagnostic means of great value. Dr. Lyon, however, has made some sweeping statements with which the surgeon cannot coincide. When the statement is made that this method can prevent gallstones, I doubt that; and when the statement is made that gall bladder conditions can be cured by his method, I take exception. A gall bladder, once infected is always infected, and the patient can only be cured by its removal. A great deal has been said about the ill effects following gall bladder operation for gall bladder disease, but Dr. Lyon was not quite specific enough when he used the term operation for gall bladder disease. Cholecystostomy is not the operation of choice. Cholecystectomy is the operation of choice and there is no question that if more cholecystectomies were done, fewer cases would come for re-operation. A cholecystectomy properly performed with very little traumatism, by the open method, is unquestionably as simple as an appendectomy and is followed with as good results as an appendectomy. Cases treated by Dr. Lyon's method come to us for operation; no doubt cases that have been operated come to Dr. Lyon for further treatment. His remark concerning the postoperative diagnosis is quite pertinent and one that ought to be remembered. We are trying to get entirely too much from his treatment so far as cure is concerned. The cases of jaundice that he mentions bring up the point that cases of gall bladder disease and bile passages may be delayed too long for operation. We know now that many of these cases of gall bladder disease are followed by carcinoma and I am afraid that people will put off treating carcinoma until it will affect the gall bladder passages and it will then be too late for a remedial operation.

Dr. Lyon (in closing): The hour is so late that I cannot take up a great deal of time, but I want to answer one or two points. In the first place I want to relieve a misunderstanding in regard to the use of the aspiration bulb. I have *not discarded its use* nor do I intend to; but I avoid its use wherever I can secure bile drainage by gravity alone, as I do not believe in the wisdom of abrupt bulb suction or syringe suction, on account of the possible objection of drawing the duodenal mucosa into the slots of the tube. In case the bulb or syringe is used for aspiration, one must always inject into the duodenum a little air in order to baloon out its walls before making suction, thus avoiding trauma.

I do not believe that diagnosis by this method will prove an easy matter until one has gained a reasonable amount of personal experience with it, and if others are to get reliable diagnostic results they must be willing first to go through a careful review and study of the technique and its application. On the other hand, the question of treatment by this method after diagnosis has been established (which is concerned also in determining whether the patient can be treated successfully by medical drainage) is comparatively simple and can be done by any doctor or trained nurse familiar with the general principles of it, and indeed by the average intelligent patient himself. As it is necessary to have an intelligent appreciation of how your patient is progressing he should be returned for a diagnostic check-up at stated periods.

In regard to the point Dr. Gilbride brought out, namely, that food passing from the stomach to the duodenum will evacuate the gall bladder, this is only relatively true since it depends upon the chemistry of the food chyme after it has reached the duodenum. Certain selective types of food are necessary to deliver concentrated bile from the gall bladder. The best normal physiological stimuli for this are proteins which are converted by the acid gastric juices into peptones, proteoses and albuminoses.

A point which Dr. Thomas brought out, to the effect that we can often by diagnostic medical drainage determine a precalculus stage in the gall tract disease is true within certain limitations. However, I do not expect you gentlemen to believe all of the things which I have put on record simply on their face value. You cannot be expected to believe them until you have seen them with your own eyes, but those of you who will try to do a medical gall tract drainage as it should be done will gradually come into a greater agreement with its merit.

Post-drainage pain is not an infrequent incident because the magnesium sulphate has the power to evacuate partially or wholly the gall bladder contents. If the gall bladder or ducts are inflamed and infected, such increase in their muscular activity will produce pain. It may also occur following a medical drainage, due to the movement of a stone. This very reproduction of gall tract pain is in itself diagnostically helpful. Where I can, by an analysis of the history and by x-ray, reasonably exclude the possibility of stone, I then persist in these medical drainages notwithstanding the production of pain, because I have learned that by such persistence the amount of pain resulting is gradually decreased until there are no further painful attacks. By draining out of the body large quantities of infected or poison bile, just as you surgeons have noticed an improved myocardium following your cholecystostomies, so we can do the same thing by medical drainage with a duodenal tube, decreasing the toxic dose affecting heart and kidneys as to so improve them that they can more safely later withstand the shock of operation.

Dr. Behrend states that by removing the streptococcic gall bladders the major focus is eliminated. This is true if the infection is confined to the gall bladder, but too often the ducts are left residually infected and this poisoned, infected bile, passing down through the intestinal tract is largely reabsorbed by being picked up by the mesenteric blood supply and carried into the portal circulation and back again to the damaged liver cells, and this vicious circle continued until eventually a high grade toxemia may be produced. It is in just such cases that drainage by way of the duodenum avoids this danger and secures the beneficial results which we see. Furthermore, where we can determine these cases to be in a pre-calculus-forming stage because they are throwing various elements of the crystalline chemistry of their bile out of solution, we believe that in the presence of catarrh and infection they will ultimately form gallstones. This we have some hope of preventing, when we see that after a dozen or more drainages in a case of such type we are unable further to demonstrate microscopic crystalline precipitation.

Dr. Behrend questions the possibility of cure of gall bladder disease by this method. May I ask what you surgeons mean when you say cure? The usual criterion upon which most surgical statistics are based is in what state of health the patient is when he leaves the hospital and not how he is six months or a year later. I think we can all agree that such a criterion of cure is fallacious. A postsurgical cure may be rightfully assumed when the patient does not come back for reoperation in three years time, and during this period has secured relief from the symptoms for which he was originally operated. That is a fair limit. In the same way with medical drainage of the gall tract we can now look back upon certain cases who have remained well for nearly five years since their treatment was instituted and are to-day still perfectly well, not only clinically, but who also show an absence of the direct pathological findings upon which the original diagnostic platform was based. You surgeons unfortunately cannot or do not do that. When you have assumed a surgical cure, even though you have a close follow-up system, there is no way in which you definitely check up on the success of your work beyond the mere fact of symptomatic relief. We can, however, do more than this by medical drainage, for we get a before and after view of the direct materials studied.

I am sorry Dr. Behrend said what he did about cholecystectomies. I believe the pendulum of medical and surgical opinion is soon going to swing in the opposite direction. Dr. Willis, of Richmond, Va., in his address before the Academy of Surgery last Monday night, presented extremely forcible arguments against the routine practice of cholecystectomy. He believes in the combination of medical and surgical drainage as presented in my paper. In cases in which you find pathology, such as firm adhesions which will not permit of proper function of the gall bladder, or atrophied gall bladders, or fibrous and contracted around a solitary stone, or of the true strawberry variety, or cancerous, such gall bladders should properly and wisely be removed.

In regard to the argument of infection in the gall bladder wall, I have studied postoperatively many gall bladders, and have sectioned them from fundus to cystic duct, and have found the pathological evidence of previous infection, but have only occasionally demonstrated bacteria remaining in the walls. I should like to see more of this work done to believe the statement that "a gall bladder once infected always remains an infected gall bladder." The operation of cholecystectomy is not a simple operation and has a relatively high rate of mortality in the hands of the best surgeons, and is not an operation to be lightly recommended to the surgeon who operates only occasionally. I hope if I come to the operating table they will leave my gall bladder where it is unless it has one of the three or four definite indications for its removal.

In a recent series of 100 cases of gall bladder disease, seventeen of them had undergone previous gall bladder surgery, and in fifty per cent of these the gall bladders had been taken out, and yet these patients were not well. Some of them had secondary operations on their ducts and were still not well. Quite a few of these postoperative cases of a grave type have been treated by this method, and I should love to have the opportunity to demonstrate them to you. The question of cancer of the gall bladder is, of course, very important, but it represents only about eight per cent of the lesions of the gall bladder, and if you would conceivably withhold a measure that may be primarily successful in curing the patient on account of such a comparatively small percentage, you are in exactly the same position as Dr. McGlinn mentioned in regard to cancer of the cervix.

OBSERVATIONS ON SOME OF THE FOUNDATIONS OF DISEASE AND THEIR PRACTICAL APPLICATIONS*

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The complications incidental to the growth of biomedicine are such that it is almost impossible for an internist to comprehend with any assurance the various fields which make up its domain. Specialization is now well established even within internal medicine, as is illustrated by such branches as electrocardiography, the metabolic disturbances and the like, and it is problematical how, in the future, a proper perspective is to be correlated with any detailed information.

In view of the many different fields and the complexities of each, some principles or guide of thought and action are desirable. Fortunately, the advance of knowledge lends itself to this end, and few things are more apparent than that various plumb lines of investigation often tend towards a common center. The farther they are followed, the nearer they may approach each other, and a visualization is thus sometimes obtained of the relations of various disease entities to each other.

It is the function of clinical medicine in some degree to anticipate the fuller developments in new fields requiring time for their growth. This attitude is justified, not only by the benefits which may accrue to the sick long before academic fullness is reached, but also by the direction given to current clinical thought. It is the purpose of this article, therefore, to call attention to some of the substrata at which points of contact can be determined in certain apparently diverse lines of pathology and to attempt to draw from them such practical conclusions as our present state of information permits.

It is not very long since the apparently diverse phenomena of inflammation in the several structures of the body were reduced by the Virchow school of pathology to common principles applying to inflammation at large wherever its occurrence. Order was at once brought out of chaos and many phenomena of disease were found to depend upon the location rather than the specific nature of the inflammatory processes concerned. By the same token, some perspective is being gradually evolved regarding such a complicated syndrome as cardiovascular disease, and we are now better able to appreciate that the processes bringing it about have between them certain common actions which impress themselves in this or that part of the cardiovascular system according to the conditioning circumstances.

A philosophic perspective of medicine almost necessitates such conclusions a priori. This is well illustrated again by the apparently diverse pathological manifestations which follow luetic infection. Lacking knowledge of the common origin of these, it becomes much more difficult to correlate with one another such apparently diverse conditions as aortitis, myocarditis, cirrhosis of the liver, gummata wherever occurring, and the varying manifestations of organic nervous disease.

It seems fair to state that we are today prepared for the viewpoint from which less specificity should be given, in some systemic disturbances, to the organs involved than to the possible causes of their pathology anywhere operative. Given more certain pathological substrata it is easy to see, as just mentioned, that various clinical disease entities may be determined by the site at which such processes take place, rather than by differences in these processes at different sites.

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One of the most recent observations relating to some of the common denominators running through disease is to be found in the widely exploited doctrine of focal infection. Much has been written on this topic. Attention has been directed almost exclusively, however, to the clinical recognition and removal of focal infection, and while the bacteriological nature of most focally infective agencies can safely be assumed, there has been little or no light thrown upon the mechanism by which these have their baneful effect. It may be pertinent to refer briefly to the opportunity afforded on an unusually large scale during the war for the study of focal infection in its relation to arthritis. Observations were conducted on 400 cases of arthritis in soldiers, and I should like to direct your attention to certain conclusions from these studies illustrative of progress in the search for common denominators in disease. You are doubtless all familiar with the so-called glucose tolerance test, by means of which is estimated the concentration of glucose in the blood stream after ingestion. This estimation throws light upon phenomena which are thought to be related to combustive processes at large, and in some part probably are. It is interesting to note that in the presence of focal infection giving symptoms, there may be a marked dislocation of normal function such that the glucose is not removed as promptly or thoroughly as under normal conditions, and the delay may indeed resemble the disturbance characteristic of diabetes. Incidentally, this lowered glucose tolerance more or less parallels the arthritic syndrome at large, but it is of its close relation to focal infection that we wish to speak here. Upon the removal by operation of a causative focal infection, this lowered sugar tolerance may very promptly return to normal, and with this return the associated clinical phenomena may also disappear. Most of the pathological evidences of focal infection are to be found, not at the site of this infection, but at some removed region where they manifest their influence, and the recognition of a concomitant disturbance in the intermediary metabolism is of distinct value in helping us to recognize and plot out the pathology concerned. It is fair to say that focal infection is the most common cause of a lowered sugar tolerance and that its reported frequency in other disease, as well as certain aberrent findings there, have sometimes been referable to unrecognized foci rather than to the disease under consideration. I hope later to refer briefly to the possible mechanism by which this disturbed sugar tolerance is brought about. Just now, however, I should like to direct your attention to certain other factors which we may regard as possible common denominators of disease.

A very wide field of physiology has recently been opened up in relation to the respiratory function of the blood by the English school of physiologists lead by Haldane, Barcroft and their colleagues, and further developed by the two Hendersons, Means, Peters and others in this country. The work of these physiologists has thrown much light upon the nature of the respiratory functions of the blood and upon conditions which determine and modify oxidation. The full significance of these newer concepts is barely outlined as yet, but the processes involved are so obviously fundamental to the phenomena of life that their relation to pathological conditions in a wide sense cannot be doubted. One direction of application has already been found in aviation and the disturbances arising through it. The study of these processes in their relation to clinical phenomena has been successfully begun by Means, Peters and others in this country, and I should like to direct your attention for the moment to certain observations of a parallel nature which Dr. Hendrix, Miss Crouter and I, in collaboration with R. B. Osgood, have made at the Presbyterian Hospital, Philadelphia.

We have been studying primarily certain chronic forms of disease, but have found that in the presence of a lowered sugar tolerance there is, during the increase of blood sugar, a coincident rise in the percentage saturation of oxygen in the blood. This occurs to a degree rarely seen in the blood of normal persons. Carrying our observations further, we found that the percentage saturation of the blood with oxygen runs, on the average, some 12 per cent higher in the arthritic than it does in the healthy, that is, an increase of 25 per cent, and may indeed reach very high figures, 100 per cent above some normals. The mechanism of this is not entirely clear but the deduction must be made either that the oxygen cannot be chemically utilized or, more probably, passes through the tissues at such a rate for some reason that they are unable to withdraw it as usual. The reason for this deduction is to be found in the fact that a study of the dissociation curves of Hgb. for oxygen, showed no change of a chemical nature disturbing the respiratory functions of the circulating blood. This forced upon us considerations of the blood flow and other matters. The effect of this state of affairs in any event is that more oxygen remains in the blood and that less goes into the tissues. It is also of great interest to note that during convalescence or recovery the high saturation figures for oxygen tend to return to normal. It would seem that we are dealing with a disturbance of fundamental physiology which must be considered not only in relation to specific disease but also in its relation to wider expressions of pathology.

It may not be out of place to mention parenthetically at this juncture the results of a study conducted at the Presbyterian Hospital by a number of my colleagues* and myself, on the various types of focal infection in a series of a hundred consecutive admissions to my service on the medical wards. The value of such studies depends upon the experience and skill available and in any event entails a great deal of sustained coöperation and effort. For these reasons dependable data upon large series of cases in respect to the known avenues of focal infection are rare, although studies are not lacking in which the question has been considered at length, from the limited viewpoint of one type of infection. Our figures show that focal infection of some kind was present in 90 per cent of cases. The most common infective agents are in the nose, throat and sinuses, the second are dental, the third are genito-urinary. It is of interest to note the frequency with which sinus disease plays a potential rôle for evil, and that the G. U. conditions are least in frequency. These figures correspond well with the statistics afforded by the army studies, though the incidence of G. U. conditions is higher in civil life than among the soldiers. The internist seeking for the cause and contributory factors of disease, even though the disease be of acute type, cannot at the present day ignore the necessity for such analysis. Its relevance to chronic disease of obscure origin is becoming widely appreciated, but the writer strongly suspects that some of the inconspicuous foci met with, may contribute to the severity of other acute diseases, such as pneumonia and other infections, and even pave the way for their establishment. It is easy, of course, to stretch this conception too far. However, one can believe that the disturbances in physiology described, interfere with many bodily mechanisms, including the defensive, which may, by that token, function less successfully towards the omnipresent demands in other directions. Successful therapy in this connection depends not upon mere recognition of the principle involved, but upon the thoroughness and skill with which it is applied; and the writer has had to develop, with some of his colleagues, an intensive experience in which the inadequacy of many supposedly thorough examinations in the past stands clearly revealed, his own as well as others. It may be remarked that a study of the sugar tolerance and blood gases may at times reveal the presence of operative factors which mere clinical examinations cannot detect.

Another application, not widely appreciated, of the principle under discussion relates to the at least occasional origin of diabetes from focally infective agencies. Blodgett has reported two cases of diabetes in which this relation was substantiated by recovery after removal, and the writer has long been impressed with the thought that factors making for a lowered sugar tolerance may also contribute towards, or aggravate that lowered sugar tolerance characteristic of diabetes. Indeed, when a diabetic of mild nature has become sugar free, with a normal fasting blood sugar, he reacts to fasting analysis essentially as does a normal person, and it may be occasionally difficult to tell by laboratory experiment where a greatly lowered sugar tolerance from focal infection ends, and where one mildly lowered from diabetes begins. The low sugar tolerance of diabetes is probably *sui generis* but the coincidence of the two conditions is some arugument for a common denominator between them.

The operation of these principles can be seen in another distinct field, namely that of functional nervous diseases. In the course of studying a very large series of arthritics, the writer has been forced to relate the common origin of some types of functional nervous disease to the various causes which produce arthritis. In other words, the metabolic factors which produce arthritis may also produce a variety of other symptoms dependent upon their disturbance of other tissues. It is important here to bear in mind the fact that bacterial infection is by no means the only cause of arthritis, and even when it does so operate, the effects produced arise from the resulting chemicopathologic disturbance and rarely if at all from bacteria *in situ*. This is partly illustrated by the blood changes above mentioned.

The association of neuritis with rheumatoid conditions is pretty generally recognized, but involvement of other parts of the nervous system is far from appreciated. The familiar headaches of the arthritic, however, is one evidence of this, as is also the dizziness of which so many complain. Instances are not lacking in which great mental depression has been an accompaniment of arthritis, amounting sometimes to suicidal proportion and it seems probable that some of the true insanities originate in the same way. There seems, on many scores, little reason to doubt that part of the pathology in these conditions is referable to interference with oxidative metabolism in the nervous tissues. When obscure cases of functional nervous disease are submitted to such analysis (for example, studies of the sugar tolerance and blood gases) the causative pathology behind the screen may be recognized when it would otherwise fail of recognition. It is, of course, axiomatic that in such cases there should also be conducted estimation of the blood nitrogen, chlorides, creatin, etc., together with any other functional tests which might throw further light on the general picture.

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*Dr. B. A. Thomas, Dr. N. P. Stauffer, Dr. Jas. E. Aiguier and their assistants.

It must by no means be supposed that the various symptoms referable to so-called focal infection originate only in surgical pathology. The changing fashion in medical nomenclature has recently substituted the term focal infection for auto-intoxication, but they both imply a disturbance referable to a more or less inconspicuous site of malfunction or absorption and defense reaction. We must, therefore, consider also such fields as the endocrine system and especially the gastro-intestinal tract, which as yet is so poorly mapped out. The rôle of the thyroid, adrenals and other endocrine glands forms too large a chapter for discussion here, but both clinical and experimental data point to their, at least, occasional involvement in a causal way, especially the thyroid. This will be referred to briefly later when discussing its relation to metabolism and treatment.

Turning to the gastro-intestinal tract there are, of course, surgical infections to be considered, such as chronic cholecystitis or chronic appendicitis, but a larger and more important field is that referable to a displacement of the normal equilibrium between the various intestinal flora and also between the various digestive juices. This may sometimes be conditioned by faulty anatomy, adhesions, chronic malposture, or atony from various causes. It is pretty clearly indicated that disturbances of this kind produce not only the same clinical results as have been above mentioned, but also contribute to the same underlying pathology partly revealed by blood studies. Reference will be made later to some of the ways of meeting these last mentioned conditions when so caused. There is not opportunity here to consider many interesting phases of the problem, but one of the conspicuous clinical manifestations of this form of disturbance is seen in the fibrous nodules and overgrowths frequently accompanying arthritis. These present such a definite pathological picture as to suggest that fibrous overgrowth elsewhere and in different tissues may have its origin in the same causes. It is too much to suppose that the pathologic mechanism concerned has no wider manifestation and the possible identity of origin of at least some types of vascular fibrosis in the above factors is strongly suggested. Indeed, these fibrous nodules may occur in association with various vascular disturbances, and their common origin is additionally suggested by the happy results which sometimes follow appropriate therapy.

It has been shown above that some of the recent advances in physiology and pathology point to a defect in the oxygen delivery, and it seems possible that some of the various blood pressure disturbances of cardiorenal disease and arteriosclerosis may result partly from a compensatory effort on nature's part to meet this deficiency. In keeping with this thought and the principle of low calory feeding, in which the writer has for some years been interested, can be mentioned the recent suggestion of Mosenthal, that the benefit of the low caloric or Karel diet in nephritis comes partly from the more favorable conditions of oxidation thus induced (Am. Jr. Med. Scs., Dec., 1920). There is increasing evidence that some of the phenomena hitherto referred to cardiovascular pathology, such as dizziness and certain localized paresthesias or even localized fleeting paresis, may be explained by disturbances inaugurated along these lines.

Another field which has received but little investigation by modern methods and is indubitably linked up with the problems we are considering, is that of the skin diseases. Some of the more obscure of these, such as psoriasis and scleroderma for example, have definite clinical association with other conditions arising out of the pathology under discussion. Instead of being regarded solely as distinct entities, they could also be tentatively classified as manifestations in the dermal tissues of a very fundamental disturbance in normal physiology. There is good reason for suspecting that psoriasis, at least, is a disease of suboxidation, and in one case of arthritis accompanied by scleroderma, or a condition closely bordering on it, a lowered caloric intake alone has resulted in nearly complete subsidence of the active arthritis and in restoration of the normal appearance and texture of the skin.

Enough has been said, doubtless, to indicate that we can now speak of certain ill-defined disturbances in physiology, probably suboxidative in nature, with more confidence and in greater detail than has hitherto been possible. It is also true by the same token that we can classify as branches from the same stalk a considerable number of disease processes in various tissues of the body.

We may therefore turn from the above considerations to such practical applications of them as is possible in the way of diagnosis and treatment. Some of these practical considerations arise from appreciation of the common origin of many of the above functional or even organic disturbances. The dermatologist probably depends too often perhaps upon local measures; the neurologist upon the rest cure, the iodides and psychic reëducation, and I am afraid that we also as internists too often make the diagnosis of neurasthenia. Since it is possible to demonstrate certain fundamental changes in physiology arising from the factors discussed, it follows that there should be a wide expression of the pathology resulting therefrom. The more fundamental the physiological disturbance, the wider the pathology secondary to it. If, therefore, we recognize a disturbance involving the oxidative mechanism of the body and admit the wide variety of clinical conditions with which it may be associated, measures directed towards improving that mechanism must have wide application. This is hardly the place to detail at any length the various measures which contribute to this end. It is proper, however, to group the leading examples of them in order to be able to visualize them as a whole. It is possibly appreciated by many who use them, that such agents as hydrotherapy, arsenic, the iodides, thyroid extract, exercise, massage and the like have among them at least one common factor, namely, their influence in hastening metabolism. They do this in different ways, but the end result tends to be the same. Consider hydrotherapy for example, purely by way of illustration. There is available through it the determination locally of a greater blood supply and heightened blood flow systemically. Total metabolism observations show increased interchange within the tissue cells as a result of the hyperpyrexia. There is an added elimination of carbon dioxide through the alveoli of the lung and very probably a compensatory elimination of CO_2 through the skin, after a certain critical temperature is reached. The skin is the normal channel of elimination of CO_2 for the frog for example, and it is too often unappreciated when we endeavor to improve oxidative processes, that the latter half of the oxidizing equation must also have consideration. There is probably in clinical medicine no vaguer concept than that referred to under the head of eliminative measures. Most of us doubtless think of salts and urea and intestinal products when we hear the term, but it is certain that the gaseous metabolism is importantly, if not chiefly operative in this connection. Kendall has shown that the influence of thyroid in hastening metabolism is by virtue of the CO_2 group which is picked up by one of its benzine rings. The influence of the iodides in causing absorption, the influence in the same direction of removing focal infection, the influence of a low caloric dietary, the eliminative consequences of exercise and increased ventilation point to a common denominator. This denominator seems to be the removal of some of the end products of metabolism in which alpha-hydroxy acids, possibly phosphoric acid, and particularly carbon dioxide, are conspicuous.

Mention should be made here in greater detail of the value of a low diet in some of the conditions we are discussing. This was first developed in relation to arthritis, but before long it became clear, as indicated, that arthritis was only one of the expressions of the underlying pathology which could be reached in this way. The mechanism of action is twofold. In the first place by suitable curtailment of diet there is afforded less substrate for the intestinal flora and it is probable on a good many counts that the effect for evil of these flora is more by virtue of their influence on the substrate than because of the products of their own metabolism. In the second place, a low or lowered caloric intake induces a pronounced alteration in the tissue interchanges. The total end metabolism is of course lowered and the effect is to produce a condition approaching basal or even starvation metabolism. The lessened production of CO_2 simplifies the oxidative equation and in those instances, accompanied by loss of weight and some utilization of the body tissues, where for the time being catabolism runs ahead of anabolism, the change in the clinical picture may be almost immediate. It is pertinent to mention again that this use of a low caloric dietary in certain cases finds support in exact observations on the blood, revealing an incapacity to remove glucose from the blood stream and an accompanying failure of utilization of transported oxygen. Certain symptoms of this pathologic syndrome, such as mental depression of marked degree, fibrous overgrowths in the subcutaneous tissues, articular disturbances, certain vascular manifestations, and other clinical symptoms which space will not allow of detailing, may diminish or even disappear under the conditions mentioned. The problem is not simple, however, and requires a knowledge of nutrition and caloric feeding. Even when conditions are too advanced for a return to normal physiology after thus lightening the metabolic load, the foundation may be laid for the successful use of such familiar adjuvants as the iodides, hydrotherapy, massage, arsenic, etc., which are too often unavailing alone. Indeed, "sparing" the metabolism in the way indicated produces the same result as increasing it by the agents just mentioned and when they can be appropriately combined results may follow which are otherwise unobtainable. The work of Child (Am. Jr. Physiology, XLVIII, 256) and others on planaria, showing the influence of starvation towards a youthful type of metabolism, is very suggestive; and recently Jacobs (Am. Jr. Physiology, LIII, No. 3, 1920, 457) has adduced convincing evidence on the penetrating and toxic properties of CO_2 disproportionate to its place in the scale of acids in terms of hydrogen ion concentration.

There is as yet inadequate appreciation of the fact that following acute diseases, such as dysentery or empyema and especially following chronic low grade infections, there may be a more or less permanent dislocation of certain metabolic processes which need for their return to normal much the same opportunity for recuperation that is given to an injured limb or to a decompensated heart. Furthermore, there is good reason to believe that the benefit following the so-called Karel or other low diet treatment in decompensated cardiac conditions is referable not alone to the improved dynamics of the circulation, as generally accepted, but also to the lowered metabolic burden on all the tissue cells already laboring under anoxemia.

There is no opportunity here to discuss in detail the fascinating and complex biochemical problems concerned, but there can be no question that we are in a position now to adumbrate as never before, the rationale of many measures which successfully reach the wide borderland between certain functional and organic diseases. It is probable that, to a degree which as yet we do not appreciate, organic disease begins as a functional disturbance and that many of the clinical entities which, in the end, group themselves as hepatic cirrhosis, arteriosclerosis, some forms of mental disturbance, etc., begin as dislocations of basal and widespread processes of physiology. It is not unlikely that the field of so-called metabolic diseases should, at least from the philosophic standpoint, include many more disease processes than are now allocated to it, and there is reason to believe that some of the early future developments in medicine will strengthen this view.

CONCLUSIONS

There is a large group of conditions which arise from a common stratum of pathology and, for purposes of treatment at least, can be regarded as manifestations of this pathology in the various tissues concerned, rather than as discrete clinical entities.

These include certain forms of functional or organic nervous disease, certain of the skin diseases, the diffuse muscular or peripheral nerve disturbances which characterize the rheumatic syndrome, arthritis, possibly some phases of the cardiovascular problem and others.

The causes of this basal pathology are often to be found in so-called focal infection, in disturbances in the function and flora of the intestinal tract, in the ductless glands, in malfunction of various viscera as a result of faulty anatomy or posture, in the aftermath of acute prostrating disease and in the disturbance of the metabolic equilibrium by a variety of external factors.

The clinical symptoms resulting generally give the first evidence of this pathology, but it may sometimes be independently recognized by such studies as those of the sugar tolerance and blood gases. In searching for occult causes, such analyses may go far towards revealing their presence and in indicating when they have been successfully removed. It is important to appreciate that a lowered sugar tolerance is no more than an index to a disturbed physiology, but that it parallels focal infection, when accompanied by symptoms, to a degree probably greater than it does any other disease except diabetes and possibly hyperthyroidism. A lowered sugar tolerance is apparently much more frequent as a result of focal infection than from either of these other causes.

Additional light is thrown on the matter by the high percentage saturation of oxygen in the circulating venous blood, indicating the failure of the tissues to utilize transported oxygen. This is further suggested by the rise in the percentage saturation of oxygen which accompanies a lowered sugar tolerance. These disturbances tend to diminish or disappear upon recovery or removal of the cause, and in conjunction with other facts, strongly suggest that the pathological process concerned is at least partly due to interference with the oxidative metabolism. This carries with it a clue to the kind of therapy indicated.

Despite all that has been written upon focal infection, analysis is often far from complete, both in appreciation of the problem and in the methods employed for its detection.

In many diseases such as those mentioned above, and also as the result of long-standing, low grade infections, there may be a more or less permanent dislocation of metabolism which may require an adjustment of the burden on it before recovery can occur. This may be true whether or not the disturbing agent has been removed.

Appreciation of some of the pathology concerned in these conditions makes it not infrequently possible to achieve marked benefit by adjusting the metabolic burden on the one hand, and on the other by stimulating the metabolism by a variety of measures which alone are unequal to this end.

It is believed that exact data suggesting the nature of the metabolic dislocation discussed have not hitherto been available.

318 South 21st Street.

DISCUSSION

Dr. Irwin J. Moyer (Pittsburgh): I can do little more than commend the writer of the paper for his efforts to have us look at some of the basic principles in the etiology of disturbed physiological conditions. These active basic principles are the most essential considerations; otherwise we understand and treat disease purely from the symptoms.

As disease is simply a disturbed physiological condition, our effort should be to study this basic factor as fully as possible, in the endeavor to relate effect to cause. Thus we note that renal disease is the most important, or at least the most frequent cause of arteriosclerosis, although there are other factors. Many times we have myocardial conditions in which there is no organic lesion of the heart and without much change in arterial conditions, but we do not know the exact means by which these are brought about. The electrocardiograph is the best means for studying them; before we had that instrument we were in the dark. The origin and results of the great group of infections, particularly the systemic infections, are as yet largely unsolved problems, and Dr. Pemberton's statement that they bring about disturbance of the oxidative process is exceedingly interesting.

In addition to these basic conditions that we must understand in order intelligently to apply our therapeutic principles are many other conditions to which we must needs give our careful attention: the disturbance of the respiratory process of the blood; the bacteria and their toxins, and how to eliminate these; the various disturbances of the glands; the various pathological conditions, such as ptosis, that come from anatomical disturbances of the intestinal tract; the great group of symptoms of nervous character that originate in patients suffering with so-called mucous colitis, etc. What is the nature of these disturbances? How do they originate and what are the best means of relieving them? We must study these things in order to arrive at anything definitely beneficial to these pathological conditions.

In this connection, the most excellent discussions of yesterday, on the subject of pernicious anemia and the great amount of disturbance that originates from disturbed metabolism from that source, are apropos. We do not know the cause of it, but we know that it produces a great variety of symptoms which are degenerative in character and that do not belong to any other disease.

Dr. Francis J. Dever (Bethlehem): I think that we all owe Dr. Pemberton a debt of gratitude for taking our attention away from the symptoms and focusing it on the underlying causation, the basic principles of disease. I was much interested in his remarks relating to focal infection. Focal infection, although probably a little less popular than it was a few years ago, still is an important factor. The infecting organism has its toxicity changed by the amount of oxygen supplied to the part in which it grows. It seems to me that Dr. Pemberton's idea of the basic principle underlying these various changes in the body opens up a field for thought. Would it not be well if his principles should be applied so that the organisms themselves would be in the most unfavorable position for growth? Instead of focusing our mind on vaccines, which I think are usually worthless, we should learn to put the body in a condition of normal oxygen exchange, thereby making the environment extremely unfavorable for the growth of the organisms.

Dr. Pemberton (in closing): When one has such a short space of time in which to attempt to outline such a large field as this, it is very gratifying to hear one's thoughts grasped as they have been by these two speakers. I should like to illustrate to you something of the pathology back of focal infection which certain laboratory tests will sometimes develop. If for example, you give 100 grams of glucose to a normal man, there should be very little rise in the sugar of his blood a half hour and one hour after the test. If, however, you give 100 grams of glucose to the subject of a focal infection causing symptoms, there may be a very different response and the blood sugar may be very high a half hour and one hour after ingestion; that is to say he has a lowered tolerance for glucose. A large percentage of arthritics show this lowered tolerance and give very high curves for their blood sugar. There is nothing pathognomonic for arthritis in a lowered sugar tolerance. It is merely an index of a disturbed physiology comparable to leucocytosis or fever. If, however, a case of arthritis showing a lowered sugar tolerance be caused by a pair of bad tonsils and these be removed, this high curve or lowered tolerance may return to normal coincidentally with relief of the arthritis. A boy of 20 in the army, for example, had severe arthritis of one hip and ankle caused by diseased tonsils. These were removed and two weeks after removal his arthritis had entirely cleared up. On the same date his sugar tolerance which had been very high on admission, was found to be at a normal level.

It is of much interest to see that coincidentally with the rise in the concentration of blood sugar during the determination of a lowered tolerance, there is generally a marked increase in the percentage saturation of the oxygen in the blood. In general, the arthritic runs a percentage saturation for oxygen of about 60, whereas the normal man gives only about 48.

There is in these observations only an outline of the pathology behind the screen, but this is undoubtedly valuable at times in helping us to detect and measure that pathology when it is not apparent by gross clinical measures. Furthermore, it must appear obvious to you that if a patient shows a demonstrable difficulty in removing ingested glucose from his circulating blood, one of the ways of meeting this disturbance is to avoid overloading his blood with substances it cannot take care of. In other words, if the cause of such a disturbance cannot be removed, much can sometimes be accomplished by adjusting the metabolic burden proportionally. It is on this basis that a reduced caloric intake has been found so useful in arthritis and certain other conditions. Even when lessening the metabolic load is not in itself adequate to relieve symptoms, it may nevertheless afford foundation upon which other therapy can be built. If the metabolic burden be adjusted on the one hand, and on the other, the metabolism be stimulated to added effort, results not infrequently follow which cannot be achieved by other means alone.

SELECTIONS.

HISTORY OF THE NORTHERN MEDICAL ASSOCIATION*

DAVID RIESMAN, M.D.

PHILADELPHIA

The Banquet Committee has placed upon me for tonight a double duty, that of historian and that of toastmaster. If I am not mistaken, the Revised Charter of the city prohibits double office holding, but until my case comes before the Supreme Court of the State for final adjudication I shall have to bow to the Committee's orders, which I do with the best grace I can command.

The history of the Northern Medical Association is a worthy theme, for the Association has occupied an honorable place in the life of our city. But with a modesty becoming an institution founded by members of the Society of Friends, it has not heralded its virtues in the market place. If I proclaim them tonight, it is because, after seventy-five years of quiet usefulness, one may with propriety let history speak the truth.

To the north of Vine Street, the northern boundary of the Old City, there lay the district of the Northern Liberties—attractive colonial-sounding name—and the district of Spring Garden, peopled by the best elements that made up the body politic of Philadelphia before the 19th century had passed its zenith. Here, in 1846 a group of earnest physicians organized the Northern Medical Association, taking into it not only the practitioners of the Northern Liberties and Spring Garden, but also those of Germantown, Kensington and Frankford. It was about the time of the Mexican War. How distant that sounds! Abraham Lincoln was not yet known beyond the confines of Illinois. There were but 29 states in the Union, which had a population of 20,000,000. In Europe, Louis Napoleon was still consul; the Hohenzollern sway did not extend far over the land of the German tongue; Italy was in large part a vassal state; Great Britain's influence in the world was comparatively small, Sinn Fein was unknown, Japan was still a land of mystery, more so than Thibet is to-day, and the Eighteenth Amendment was undreamt of. I wish I might dwell on the significance of these seventy-five pregnant years, on their meaning, not for medicine or for surgery—eloquent tongues will speak of this tonight—but for literature, for science, for civilization in general. But this is not the time for a *Carmen saeculare*. I must say, however, that only thirteen years after the Northern Medical Association was organized, appeared the most important book since Harvey's "De Motu Sanguinis": Darwin's "Origin of Species." Two years later the Civil War began. These two events in themselves are of transcendent importance. It is true the seventy-five year period did not produce a Shakespeare, but it gave us an Abraham Lincoln. It did not produce a Raphael, but it gave us a Darwin. It did not produce a Bacon but it gave us a Pasteur. It was and is a great age, one by which men in time to come will measure other ages, as we now do by the thirteenth and the fifteenth centuries.

In the Medical Examiner and Record of Medical Science for January, 1847, the following note appears:

> "We are gratified to learn that a number of the physicians residing in the northern section of Philadelphia, embracing Spring Garden, Northern Liberties, Kensington, Germantown, and Frankford, are about forming themselves into an association for literary and scientific improvement, and the promotion of good fellowship and sound medical ethics among the members. It is intended to admit none as members but graduates in medicine, excluding all who are practising or encouraging the various systems of charlatanry, under the mask of reform, and thereby undervaluing the science and skill of regular physicians, and thus bringing the profession into disfavor with the community.
>
> "Many of our oldest and most respected physicians reside in the district mentioned, and their association for such praiseworthy objects cannot but be productive of good, especially to their junior brethren, who will by this means be admitted to their more intimate fellowship."

As I have said, a group of men progressive in spirit organized the Northern Medical Association in 1846. At that time the College of Physicians was the only active medical society in the City of Philadelphia. It is true that a Pathological Society had been founded in 1839, but it was either dying or already dead. The Philadelphia County Medical Society had not been born, nor had the State Society and the great National Association come into existence. At the inaugural meeting held on January 14, 1847, the following officers were elected: President, Dr. Benjamin S. Janney; Vice-President, Dr. Arnold Naudian; Counsellors, Drs. Uhler, Yardley and Hatfield; Treasurer, Dr. M. B. Smith; Secretary, Dr. Remington; Reporting Secretaries, Drs. Townsend and Bryan. The editor of the *Medical Examiner* makes this comment:

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*Address delivered before the Northern Medical Association at its 75th Anniversary, Philadelphia, April 21, 1921.

> "The association has been judicious in the selection of gentlemen for its officers who are greatly respected in this community, and under such favourable auspices the best results must follow its organization."

The young society quickly became prominent and influential, in proof of which we have the fact that it was permitted to send delegates to the conventions of the American Medical Association until 1874, when, for reasons not stated in the records, the practice was discontinued. To the first convention of the American Medical Association, held in Philadelphia, the Northern Medical Association sent five delegates, the Philadelphia Medical Society 12, the College of Physicians 12, the University of Pennsylvania 3, Jefferson Medical College 3, Pennsylvania College 3, Franklin College 3, and Philadelphia College of Medicine 2—in all 43.

The Northern Dispensary, at 608 Fairmount Avenue, was instituted October 1, 1816, and chartered March 26, 1817. From the beginning the Association was closely identified with the Northern Dispensary, its initial meeting being held in Dispensary Hall at No. 603 Spring Garden Street. On January 7, 1848, the first oration was delivered by Dr. Harold Naudain, the members of the College of Physicians and of the Philadelphia County Medical Society being invited. The second was read by Dr. Isaac Remington on January 9, 1849. Dr. Remington, a native of Germantown, practiced throughout his whole life near 6th and Vine Streets. He was a member of the orthodox branch of the Society of Friends, a graduate of the University of Pennsylvania, and a leading practitioner of the city. In 1832 he had charge of a cholera hospital near Sixth and Vine Streets.

In 1854 the outlying districts were united with the older city, which thenceforth became coterminous with the county. This seems to have had no special effect upon the Northern Medical Association. In 1881, up to which time the meetings had been held at No. 603 Spring Garden Street, the Association moved, together with the Dispensary, to No. 608 Coates Street, now Fairmount Avenue, and there the meetings were being held when I joined the Association. In the year 1916, on May 26th, the meeting place was changed to the Joseph E. Widener Branch of the Free Library, Broad Street and Girard Avenue.

Of the original members, the Founders, little can be learned. There exists a biographical sketch of Nathan Lewis Hatfield prepared by the late Dr. Hess. Hatfield was in the first class graduated from the Jefferson Medical College in 1826. He was a member, and for a time President of the County Medical Society, and though a modest general practitioner held a number of other very high positions, being a Fellow of the College of Physicians, Vice-President of the State Medical Society, and President of the Jefferson Alumni Society. He was several times Chairman, or President (why the distinction I do not know) of the Northern Medical Association, for the last time in 1884, at the ripe age of 80 years.

Among the early presidents were a number about whom I should like to know more—Naudain, Yardley, James, Curtis, and Owen Osler. The 12th president, serving in 1861, was Lewis P. Gebhard. He had been a pupil of Benjamin Rush, thus linking this society with the Revolution and the great physicians of that time. He had a very large practice, with an office in Race Street, opposite Franklin Square. Gebhard lived through a number of severe epidemics, among them the yellow fever epidemic of 1820, and the influenza epidemic of 1825. This latter in the words of Dr. George Hamilton, Gebhard's biographer, "carried off far more of the inhabitants than it was ever known to do before or since." He also witnessed the terrible cholera epidemic of 1832. An ardent advocate of temperance, it was in his parlor in Race Street that in July, 1827, was held the first formal temperance meeting in Philadelphia.

William B. Atkinson was Secretary in 1859 and President in 1868. He was a tall, distinguished looking man with a long flowing beard, who held many important offices in the national, state and local societies.

Another president whose name should be remembered was Richard J. Levis, one of the founders of the Polyclinic Hospital and Postgraduate School and an inventive surgeon who removed a cataract and amputated a breast or a leg with equal dexterity.

In 1870 the late William M. Welch became President, a man who was our guest of honor but a few years ago. When I last saw him, on the night of the Keen dinner, he was apparently as hale as ever. Since then he has passed away, leaving behind an honored name.

Dr. Welch was succeeded in 1871 by James Collins, who was President again in 1890. Collins, who was still an active member when I joined the Association, came of a colonial family of Friends, which settled in Bucks County, Pennsylvania, where he was born in 1830. A graduate of the University of Pennsylvania in 1853, he was one of the early pilgrims to the German Universities. Up to that time Paris, Dublin and Edinburgh had been the Mecca of American medical students. He served as surgeon through the Civil War and experienced the horrors of Libby Prison. His life's history is told in a graceful memoir by our friend John Millick.

The man who held the office of President in 1875 is still living and is here to-night, 46 years after, J. Solis Cohen, whom we have delighted to honor for his contributions to a great specialty of surgery, for his high personal character and for his patriotic devotion in the great crisis. To him and to his successor in the chair, Charles K. Mills, I ask you to drink a toast—To the Pioneer in Laryngology and to the Pioneer in Neurology!

Dr. L. Brewer Hall, a quiet, ultramodest ophthalmologist, was President in 1878; Edward R. Stone in 1879, and the eternally youthful Montgomery in 1880.

James B. Walker, the President in 1881, is still remembered by most of us, as an unusually handsome man, Professor of Medicine in the Woman's Medical College, President of many societies, cofounder of one of the important medical fraternities, a man of influence in Philadelphia's medical life.

I now come to one about whom I should like to speak at length, but time forbids. Moreover, I took the occasion last year to pay a humble tribute to his memory, the friend of my early days, Henry W. Rihl. He might have served as prototype for Balzac's "Country Doctor" or for Ian MacLaren's "Doctor of the Old School." A humanist, a classicist, he represented a vanishing type that we shall lament as we lament the disappearance of men like Erasmus, Thomas More, or Pico della Mirandola.

In 1884 Dr. Robert J. Hess was President, or as it was then called Chairman. Dr. Hess was one of the kindliest and most conscientious men I have ever known, and devoted unusual talents to his duties as chief physician of the Northern Dispensary.

Philip Leidy, brother of the great Joseph Leidy, the American Darwin, and father of the present Joseph Leidy, was President in 1889. Leidy served with great credit in the Civil War, attaining the grade of Major in 1862, at the age of 24. In the following year he was made Post Surgeon of Winchester and Medical Inspector of the Shenandoah upon the staff of General Sheridan—surely a high honor for a youth of twenty-five.

The other living ex-Presidents will forgive me if I do not speak of them. Perhaps at the Centennial celebration some one more eloquent, standing in my stead will have the honor of duly praising them.

One President among those who served since I came into the Association is dead. Of him I want to speak—Thomas Shriner, the sage of Kensington. Shriner was a rough diamond, loyal and kind and possessing that which no man wants to be without and which many lack, a sense of humor. Shriners are common in the world, but Thomas Shriners are rare.

Of the other officers, secretaries, treasurers, etc., I shall not speak except of one, of him who has served us with unsurpassed fidelity as treasurer for thirty-two years. I thought last year that he was beginning to show some signs of age—his hair seemed a little grayer, his eye a little less bright, his back a little more stooped, but either because he has had the Steinach or Voronoff operation or because something else has happened, his youth has been renewed. I ask you to drink a toast to faithful John Millick, our latest "Benedick."

A number of years ago, largely through the efforts of Dr. Albert Bernheim, there was established a custom of annual banquets, at which the society has had distinguished men as guests of honor. This custom I trust will be continued. In 1896 the semicentennial of the Association was celebrated with a brilliant banquet at the Hotel Walton.

The history of the Association would be incomplete if I did not refer to a fierce debate in its early years regarding the admission of women. It was a time when passions ran high over the queston of the right of women to study medicine. An attempt indeed was made to expel a prominent member, Dr. B. B. Wilson, because he lectured to women. Eventually, however, the society decided to admit women and was, I believe, the first to do so.

It was one of the chief characteristics of the many-sided Osler that he encouraged young men, who, timid and without confidence in their own powers, regarded a word from him as an inspiration. It was also the characteristic of the Northern Medical Association that it encouraged young men. In no organization that I knew in my early days did the older man treat the acolyte in medicine so kindly. In the Sanhedrin in Jerusalem the presiding priest would always call upon the young men and call upon them first so that their judgment might not be influenced by that of their elders. In the Northern Medical Association the young men were likewise always called upon to speak and their words, good or bad, received courteous attention. Tom Shriner might sometimes make a facetious remark; he never wounded.

Gentlemen: The character of the Northern Liberties and the District of Spring Garden has changed greatly since 1846—a new type of American is springing up where once the German speech and the stately address of Penn's followers were heard, but the new men, faithful and true to the traditions of the Association, have kept it the arena of the young. I hope they will always keep it so.

1715 Spruce Street.

SUPERSTITIONS, FALLACIES AND FACTS OF ANCIENT MEDICINE*†

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Suppose you step with me into the mysticism of the distant past, and live the fallacies and the charlatanisms of former centuries.

All of us are probably familar with various rural superstitions relating to warts—that killing or handling a toad may be causal, and that removal of these excrescences can be accomplished by touching them with pebbles or by certain charms; with the notion that stump-water is good for freckles; or that bad eyesight can be remedied by the water into which a blacksmith has dipped his red hot iron. In some parts of Holland, if a boy carrying water lillies in his hand falls down, it is supposed to render him liable to fits. Readers of Longfellow's "Evangeline" may recall the line which refers to malaria as "cured by wearing a spider hung around one's neck in a nutshell."

Various curious beliefs have existed in the past in reference to whooping-cough. In Norfolk, England, a spider was tied up in a piece of muslin and pinned over the mantlepiece as a remedy for this disease; in Donegal, a beetle was placed in a bottle; in Suffolk the child was dipped head downward, in a hole dug in a meadow; in northeast Lincolnshire, fried mice were employed; in Yorkshire, owl-broth; in other parts of England, the child was ridden on a bear; in Scotland anything that might be suggested by a man riding upon a piebald horse was curative. It has been well said, "Nature cures the disease while the remedy amuses the patient."

According to Bateson, a Turkish upholsterer, during the delirium of typhus fever, drank from a pail of pickled cabbage and recovered; whereupon the Turkish doctors declared cabbage juice a specific for the disease. The next patient dying under this regime, however, they modified the dogma by saying that cabbage juice is good for typhus provided the patient be an upholsterer.

The idea was promulgated in the past that disease could be transferred from one body to another. Hence Pliny, in his "Natural History," claims that abdominal pain can be transferred to a duck or a dog. Other well-known forms of this curious belief are the healing of snake bite by clapping the bleeding entrails of a bisected fowl to the wound (natural absorption), and the negro superstition of pegging a hank of the patient's hair into a tree in order to transfer chills and fever to the tree or its owner. Sir Kenelm Digby proposed the following remedy for fever and ague: "Pare the patient's nails; put the parings in a little bag, and hang the bag around the neck of a live eel, and place it in a tub of water. The eel will die; the patient will recover." Closely connected with this idea of transference was the old tradition of a sympathy existing between parts of bodies separated in space, illustrated in Sir Kenelm Digby's weapon salve, and the sympathetic powder.

The weapon ointment was a preparation used for the healing of wounds, but instead of its being applied to them, the injury was washed and bandaged, and the weapon with which the wound was inflicted was carefully anointed with the ointment. Although ignorant barbers and individuals of this type chiefly employed it, reputable men in the medical profession were among its supporters. The composition of this ointment was complicated, in the various formulæ given by different authorities; but some substances addressed to the imagination, rather than the wound or weapon, entered into all. It was composed of portions of mummy, of human blood, and of moss from the skull of a thief hung in chains.

The same essential idea as that of the weapon ointment was the sympathetic powder. This powder was said to have the faculty, if applied to the blood-stained garments of a wounded person, of curing his injuries, even though he were at a great distance at the time. A friar from the East, brought the recipe to Europe somewhat before the middle of the seventeenth century.

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*Address delivered to the Student Body of the Jefferson Medical College of Philadelphia, introductory to the Ninety-Seventh Annual Session, September 21, 1921.

†The writer wishes to express his indebtedness to Garrison's History of Medicine and, in a lesser degree, to Holmes's Medical Essays.

Sir Kenelm Digby was able to secure the formula of this secret compound. The efficacy of this remarkable preparation was apparently proved. Mr. J. Howell, having been wounded in endeavoring to part two of his friends who were fighting a duel, submitted himself to a trial of the sympathetic powder. Four days after he received his wounds, one of Mr. Howell's garters was dipped in a solution of the powder, and immediately, it is said, the wounds, which were very painful, grew easy, although the patient, who was conversing in a corner of the chamber had not the least idea of what was being done with his garter. He then returned home, leaving his garter in the hands of Sir Kenelm, who had hung it up to dry. When Mr. Howell sent his servant in a great hurry to tell him that his wounds were paining him horribly, the garter was, therefore, placed in the solution of the powder, and the patient got well after five or six days of its continued immersion. This wonderful substance which so astonished kings, princes, dukes, knights and doctors was nothing but powdered blue vitriol.

In 1796, an American physician by the name of Perkins, from Connecticut, brought forth a pair of metal tractors as the cure for every disease of the human frame. The tractors consisted of two pieces of metal, one iron and the other brass, about three inches long, blunt at one end and pointed at the other. Although thousands of these were sold and hundreds of miraculous cures reported, the facts speak for themselves, that the fad or delusion lasted but a few years and then died a natural death. According to Holmes "one cannot but suspect that they were contrived in the neighborhood of a wooden nutmeg factory; that legs of ham in that region are not made of the best mahogany; and that such as buy their cucumber seed in that vicinity have to wait for the fruit as long as the Indians for their crop of gunpowder."

The royal cure of the "King's Evil," or scrofula, was a common practice in England from the time of Edward the Confessor to Queen Anne. The monarchs of England were in the habit of touching those who were brought to them suffering with scrofula, for the cure of that distemper. After the royal personage had laid his hand upon the sufferers, it was customary to hang a gold piece around the neck of each patient. According to the statement of the advocates and contemporaries of this remedy, none ever failed of receiving benefit unless their little faith and credulity starved their merits. Some are said to have been cured immediately on the very touch; others did not so easily get rid of their swellings until they were touched a second time. Several cases are related of persons who had been blind for weeks or months, and were obliged to be led to Whitehall, who recovered their sight immediately upon being touched, so as to walk away without any guide. So widely at one period was the belief diffused that, in the course of twelve years, nearly a hundred thousand persons were touched by Charles the Second.

Valentine Greatrokes (Greatorex) (1628-66), one of Cromwell's soldiers in Ireland, achieved an enormous reputation in his "cures" of disease by laying on of hands (stroking) and the cure of scrofula with carrot poultices.

As being symbolic of the Sacred Yoni, children and even adults afflicted with scrofula, spinal deformity, or other infirmities, were supposed to be freed from these bodily ills when passed through a cleft or hole in a rock or tree. Traces of the Saxon of this superstition survive in the "holed stone" near Lanyon, Cornwall, through which scrofulous children were passed three times. White of Selbourne described the most recent form of this folk belief, which consists of passing a child afflicted with hernia through a cleft in an ash tree. Supposedly of a like efficacy was the Scotch custom of passing a consumptive child through a wreath of woodbine, the English trait of crawling under a bramble bush for rheumatism, and the "eye of the needle tree" on the island of Innisfallen, Killarney, squeezing through which insures long life. Such folk remedies as the West Sussex recipe for ague, "eat fasting seven sage leaves for seven mornings fasting" were in common use.

Color is a factor of great moment in folk healing; in particular, red, which the Chinese and New Zealanders regard as hateful to evil spirits, and other peoples as a heat producer. Red silken bands, necklaces of coral beads, red pills and red fire, as well as the coral rings and bells with which the baby cuts its teeth, have all had their superstitious associations. We all remember the supposed virtue residing in the familiar red flannel cloth, worn around the neck for sore throat and whooping cough. The red cloth hangings around the smallpox patient were supposed to lower his temperature by drawing the red blood outward.

The idea that certain numerals can be sacred or malignant is of Accadian origin and connected with Chaldean and Babylonian astrology. Uneven numbers had a mystic significance. Three or a multiple of three was the most popular for luck, good or bad; seven or one of its multiples for supernatural powers. These superstitious beliefs were linked with the three

Fates, the three Furies, the nine Muses, and the twelve signs of the Zodiac.

Another superstition which came from Chaldean astrology was the belief that the heavenly bodies had an influence upon disease. The sun, moon, stars, and planets, were regarded as sentient, animated beings, exerting a profound influence upon human weal and woe, and, late into the seventeenth century, European mankind resorted to horoscopes before attempting any enterprise of moment, and in particular for determining the proper time for blood-letting, emesis and purgation. Moonshine was supposed to be potent alike in causing lunacy, conferring beauty, or curing warts and asthma; and the lunar influence is further seen in the common superstition that death occurs, as in the case of Shakespeare's Falstaff or of Barkis in "David Copperfield," at the turning of the tide.

Comparable with the influence attributed to the stars, was the idea that disease is a scourge or punishment inflicted by gods or demons alike and remediable only through divine or diabolic intervention. This is well illustrated by the Greek myth of the arrows of far-darting Apollo; Bhowani, the cholera goddess of the Hindus; the many medical divinities of the Romans; the Indian and Samoyed lore of "magic bullets"; the passage in the Book of Job in which the patriarch attributes his sufferings to "the arrows of the Almighty"; Martin Luther's conviction that pestilence, fever and other severe diseases are naught else than the devil's work; the medieval figurations of death as a reaper and the folk superstition that erysipelas (or "wild fire") originates from fairy malice.

This theory of disease was exemplified in the malignant power which was supposed to attach to certain personalities. A child born on Easter Eve could cure tertian or quartan fever. Persons born "with a caul" were supposed to be clairvoyant. In the west of Ireland, the blood of the Walshes, Keoghs, and Cahills was held to be an infallible remedy for erysipelas or toothache. The saints were supposed to have the power of both inflicting and healing diseases. Thus the names of St. Guy, St. Vitus, and St. With were associated with chorea; St. Avertin, St. John, and St. Valentine stood sponsors for epilepsy; while St. Anthony, St. Benedict, St. Martial, and St. Genevieve presided over ergotism.

A remarkable belief in the malevolence of personality is the superstition of the evil eye which causes Levantines to cross their fingers and Orientals to wear a crescent of horns over the forehead as a safeguard. One of the most ancient superstitions is that disease is a malignant agency or entity, to be driven out of the body by offensive substances, as the smoke of the fish's heart and liver drove the devil out of Tobit's bridal chamber, according to the Apochrypha. Epileptics used to suck the blood from the wounds of dying gladiators. The Hon. Robert Boyle's little book, published in 1712, recommends as internal medicines most of the substances commonly used as fertilizers of the soil. It sounds odious to us to hear him recommend for dysentery a powder made from the "sole of an old shoe worn by some man that walks much."

A favorite Egyptian pomade for baldness consisted of equal parts of the fats of the lion, hippopotamus, crocodile, goose, serpent and ibex. Another consisted simply of equal parts of writing ink and cerebrospinal fluid.

Herodotus writes in regard to the Egyptians during the fifth century: "They purge themselves every month three days in succession, seeking to preserve health by emetics and clysters; for they suppose that all diseases to which men are subject proceed from the food they use." There is written in the code of Hummurabi (2250 B. C.), Babylon, that if the doctor caused the patient to lose his life or his organ of vision, he had his hands cut off in the case of the gentleman, or had to render value for value in the case of a slave.

In "The Clouds" of Aristophanes, there is a satirical reference to physicians as lazy, long-haired, foppish individuals, with rings and carefully polished nails.

Before the second century A. D., the Romans employed medical slaves (servi medici) or relied upon their special medical gods (Febris, Scabies, Uternis, etc.), with an occasional dilettante interest in healing on their own account. Besides the "medici" proper, there were the herb gatherers, the drug peddlers, the salve dealers, the army surgeons, and the body physicians to the emperors, some of whom were also public or communal.

Aetius of Amida, living in the sixth century, says that in preparing a plaster one should intone repeatedly, "The God of Abraham, the God of Isaac, the God of Jacob, give virtue to this medicament." To remove a bone stuck in the throat, one should cry out in a loud voice: "As Jesus Christ drew Lazarus from the grave, and Jonah out of the whale, thus Blasius, the martyr and servant of God, commands 'Bone come up or down.' "

The Arabian physician in the fourteenth century was required to have a knowledge of Mohammedan theology, law, philosophy, medicine, astronomy, astrology, music, chess playing and other arts and sciences. His professional importance was gauged by the height of his turban and the richness and length of his sleeves. He regarded the heart as the prince of the body, the lungs as the fan of the heart, the liver as the guard of the heart and the seat of the soul, the pit of the stomach as the seat of pleasure and the gall-bladder as the seat of courage.

According to the Mohammedan ruling, medical draughts are best taken "when the sap runs in the wood and the grape thickens in the cluster and the two auspicious planets, Jupiter and Venus, are in the ascendant." Cupping is most effective at the wane of the moon, with the weather at set-fair, preferably the seventeenth of the month on a Tuesday.

Some of the fees they received were phenomenal. Gabriel Batischua, a favorite of Harum-al-Bashid, got about $15,000 per annum "for bleeding and purging the Commander of the Faithful," besides a regular monthly salary of about $2,500 and a New Year's purse of $6,250. He estimated his total fortune in fees at $10,000,000, and on being recalled from banishment to heal Al-Meianum, he received $125,000, which Withingtin regards as the largest fee on record. Abu Nasr, according to the same authority, received more than $60,000 for curing one of the Caliphs of stone.

The largest and best appointed of the Mohammedan hospitals were those founded at Damascus (1160) and Cairo (1276). In the former of these, treatment was given and drugs dispensed free of charge for three centuries. As late as 1427, it was said its fires had never been put out since its opening. The great Al-Mansur hospital of Cairo was a huge quadrangular structure with fountains playing in the four courtyards, separate wards for important diseases, wards for women and convalescents, lecture rooms, an extensive library, outpatients' clinics, diet kitchens, an orphan asylum and a chapel. It employed male and female nurses, had an income of about $100,000, and disbursed a suitable sum to each convalescent on his departure, so that he might not have to go to work at once. The patients were nourished upon a rich and attractive diet, and the sleepless were provided with soft music or accomplished tellers of tales.

Even as late as the sixteenth century, we find Paracelsus still holding the idea that everything is made of mercury, sulphur and salt and that as "the sun rules the heart, the moon the brain, Jupiter the liver, Saturn the spleen, Mercury the lungs, Mars the bile, Venus the kidneys," so the seven planetary metals and their compounds were specific for the diseases of these organs.

Mondeville, in the seventeenth century, showed his biting sarcasm in such utterances as these: "God did not exhaust all His creative power in making Galen." "Many more surgeons know how to cause suppuration than to heal a wound." "Keep up your patient's spirits by music and viols and ten-stringed psaltery, or by forged letters describing the death of his enemies, or by telling him that he has been elected to a bishropric, if a churchman." "Never dine with a patient who is in your debt, but get your dinner at an inn, otherwise he will deduct his hospitality from your fee."

In the year 1140, Roger II of Sicily issued an edict forbidding any one to practice medicine without proper examination, under pain of imprisonment and the sale of his belongings at auction. The physician was required to treat the poor for nothing; to visit his patients twice a day and once a night, if necessary; to avoid collusion with apothecaries and to inform upon them if they adulterated or substituted drugs. The medical fee was fixed at half a tarenus (about 35 cents) for office practice or for patients residing in the city; four tareni ($2.25) for consultations. The sale of poison, magic potions and aphrodisiac was punishable by death if any person lost his life thereby.

The students in some of the sixteenth century Renaissance universities elected the rector, the professors and other officers, and had a voice in determining the courses of study. As a rule, the members of the faculty were chosen for only one year, and had to be renominated and reëlected for a further tenure of office. This peculiar arrangement kept the students and professors in continual movement from one university to another. A professor would sometimes give a "Gastpiel" of lectures in order to secure a good position, and even city physicians wandered from place to place after fulfilling their contracts. Dissections, which had been few and far between, became more frequent during the sixteenth century and were regarded in each case, as a particular and expensive social function for which a papal indulgence was necessary. The cadaver was first made "respectable" by the reading of an official decree, and was then stamped with the seal of the university. Having been taken in to the anatomic hall, it was next beheaded in deference to the then universal prejudice against opening the cranial cavity. The dissection was followed by such festivities as band music or even theatrical performances.

The salary of a university professor in the sixteenth century was variable and decidedly low in the northern countries. In Germany it ranged anywhere from forty dollars to about four or five times as much. The Linacre foundations at Oxford and Cambridge provided for two professorships at sixty dollars each per annum and one at thirty dollars, but Vesalius got one thousand dollars at Pisa. In Germany a simple uroscopy cost about three cents; single visits anywhere from eight to fifty cents, according to the income of the patient; consultations two dollars and a half for each physician, or one dollar and a quarter by letter.

Medical practice during the Renaissance period was bound up with superstition, herb doctoring, and quackery. The physician of this epoch was attired in a long robe or short fur-edged pelisse. He usually believed in astrology, and went in for the lore of amulets, or the determination of the proper time for purging and bloodletting by the conjunctions of the planets. The followers of Paracelsus believed in the "doctrine of signatures," in virtue of which a drug is indicated by some fanciful associative resemblance to the disease, as trefoil for heart disease, thistle for stitch in the side, walnut shells for head injuries, topaz and the yellow celandine for jaundice, and so forth.

During the sixteenth century the Wittenberg pest-dollars and arsenic paste sewed up in a dog's skin, were worn over the heart as amulets against the plague. In the letters of Walter H. Page, he mentions that "in Defoe's time they put pots of herbs on the desks in the court rooms of every court in London to keep the plague off."

Alchemy became an intensive cult of extraordinary magnitude in the sixteenth and seventeenth centuries, because it appealed particularly to the lust for money, the love of life, and the corresponding fear of death. The philosopher's stone, otherwise known as the "quintessance" or "grand magistery," was not only supposed to transmute the baser metals into gold, make precious stones, and to be a universal solvent, but also conferred perfect health and length of days. It was described by all who claimed to have seen it as of a reddish luster. Raymond Lully called it a carbuncle; Paracelsus likened it to a ruby; Berigard de Pisa, to a wild poppy with the smell of heated sea-salt; and van Helmont, to saffron with the luster of glass (Thorpe).

After the foundation of the College de St. Come, the surgeon was in a manner assimilated to the status of the physician. He began to put on airs like the latter, wearing the square cap and long robe, substituting the device of three boxes of ointment upon his guild banner for the traditional three basins, arrogating to himself the right to examine the barbers, and insisting that his apprentices be "grammarian clerks." "By the seventeenth century the physician had become a sterile pedant and coxcomb, red-heeled, long-robed, big-wigged, square-bonneted, pompous, and disdainful in manner, making a vain parade of his Latin and, instead of studying and caring for his patients, trying to overawe them by long tirades of technical drivel, which only concealed his ignorance of what he supposed to be their diseases."

Intensive bloodletting was rife in the seventeenth century as exemplified by the actual experiences cited by Guy Patin, who bled his wife 12 times for a fluxion in the chest, his son 20 times for a continued fever, himself 7 times for a cold in the head, while his friends, M. Mantel and M. Cousinot were bled 36 and 64 times respectively in fever and rheumatism.

The ceremonies of medical graduation in Germany in the seventeenth century were long and expensive, and to save the students' purses, banqueting was cut down to a single supper, limited to ten courses. "Ladies" and confectionary were excluded. In the case of needy students, the sumptuary features could be limited to the simple announcement of the candidate's graduation in the auditorium (at half price), the distribution of gloves and the convivium being omitted, unless the student saw fit to invite a few professors to a modest repast.

The strangest of the low country itinerants were the quacks who pretended to cut stones from the head for the relief of insanity, idiocy, or other mental disorders. In the sixteenth and seventeenth centuries it was a common byword to describe a person mentally unbalanced as having "a stone in his head." The therapeutic imposture consisted in making a superficial incision in the scalp, and palming a stone or stones which were cast into a convenient basket at stated intervals during the patients' struggles.

The medical training in America in the early eighteenth century consisted in studies with some physician under indentures of apprenticeship, receiving actual bedside instruction from the start, and, although serving as sweep and stable boy to the master, still learning how to bleed and cup, to prepare drugs and apply them.

Practice was largely inherited from father to son or passed on to favorite pupils, and in this way a certain elegant leisure was acquired by the well-to-do members of the profession, giving them exceptional opportunities for the acquisition of culture. Before 1769, according to Toner, the term "Doctor" was not even employed in the colonies.

There is plenty of evidence that the social status of the eighteenth century physician was extremely high. In some countries he wore a sword, his color was the "austere scarlet," and he even bore a muff, to preserve his delicacy of touch in diagnosis. In England, the fashionable physician wore a powdered wig, a handsome coat of red satin or brocade, short breeches, stockings and buckled shoes, a three cornered hat, and bore a gold-headed cane. Werlhof, at Hanover, on the occasion of his second marriage, wore a violet velvet coat. Toward the end of the seventeenth century, ruffled collars gave place to Geneva bands, an appropriate symbol of the clerical origin of the medical profession. The summit of its grandeur, in costume at least, is to be seen in the portrait of the elder Baron, the pleasant-faced dean of the Paris Faculty (1730-34), who wore a long, carefully curled wig, an ermine cape, a delicate, transparent rabat in place of the stiff Geneva band, a red ecclesiastical cope ("the regal dalmatic") with lace ruffles at the sleeves, and, over his breast, a decoration suspended by a long black ribbon.

The female imposters of the early eighteenth century were Mrs. Mapp, a bonesetter who was so successful that she could drive in Epsom in a chariot and four, with gorgeously liveried servants; and Joanna Stevens, a widow, who in 1739 actually succeeded in having her remedy for stone purchased by an act of the English Parliament. Her philanthropy went to the extent of agreeing to part with this valuable recipe for five thousand pounds. The ingredients of this remedy were published in the London *Gazette* of June 19, 1739, and turned out to be a mixture of egg shells, garden snails, swines' cresses, soap, and such vegetable ingredients as burdock seeds, hips, and haws. In each one of her certified "cures" the stone was found in the bladder after death.

In 1788, Tenon published a series of memoirs on the hospitals of Paris, containing his famous description of the old Hôtel Dieu, which was at that time a veritable hotbed of disease. There were some 1,220 beds, the most of which contained from four to six patients, and about 486 single beds. The larger halls contained over 800 patients, crowded on pallets, or often lying about miserably on heaps of straw, which were in vile condition. Acute contagious diseases were often in close relation to mild cases, vermin and filth abounded and the ventilation was often so abominable that the attendants and inspectors would not enter in the morning without a sponge dipped in vinegar held to their faces. The same thing was true of the Allegemeines Krankenhaus of Vienna, the Moscow Hospital, and many other large institutions. Baas says that, in Frankfurt am Main and other cities, "even physicians declined hospital service as equivalent to a sentence of death."

Broussais made the statement that nature had no healing power and it was necessary to abort disease by active measures. To this end, he adopted a powerful antiphlogistic or weakening regime, the main features of which were to deprive the patient of his proper food and to leech him all over his body. As many as thirty to fifty leeches were applied at once, even five to eight being prescribed in cases of extreme debility. In the year 1833 alone, 41,000,000 leeches were imported into France, and only nine or ten million exported.

"There is nothing men will not do," says Holmes, "there is nothing they have not done to recover their health and save their lives. They have submitted to be half drowned in water, and half cooked with gases, to be buried up to their chins in earth, to have needles thrust into their flesh, and bonfires kindled on their skin, to swallow all sorts of abominations, and to pay for all this, as if to be singed and scalded were a costly privilege, as if blisters were a blessing, and leeches a luxury."

You have wandered with me through the passing centuries and we are once again in the living present. We owe a tremendous debt to the past notwithstanding all its superstitions and fallacies.

In the words of Oliver Wendell Holmes, let us endeavor to "melt the gold out of the past, though its dross should fly in dust to all the winds of heaven, to save all of our treasures of knowledge and mine deeply for new, to cultivate that mutual respect of which outward courtesy is the sign, to work together, and to feel together, to take counsel together, and to stand together, for the truth, now, always, here, everywhere."

ANGIONEUROTIC EDEMA

James McIlvaine Phillips, Columbus, Ohio (*Journal A. M. A.*, Feb. 18, 1922), reports two cases of typical angioneurotic edema occurring in dogs. The onset and course of these attacks, their probable cause and their reaction to treatment were so precisely analogous to human cases reported in the literature that the advantages of employing the dog as an experimental animal in the investigation of food allergy and protein sensitization seem to deserve marked emphasis, especially since the symptoms of canine anaphylaxis and allergy have many differences. A detailed report is to be made later.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

NITROUS OXIDE ANESTHESIA IN MASTOID OPERATIONS

DR. WADE ELPHINSTONE

It is believed that most surgeons and anesthetists will agree that nitrous oxide, on account of its nonirritating effect on mucous membranes, should be the anesthetic of choice in the presence of infection in the respiratory tract whether tonsillitis, bronchitis or pneumonia. Ether in this class of cases is absolutely contraindicated on account of its very irritating effect and its use in the presence of bronchitis or pneumonia is out of the question.

Mastoiditis is one of the most common diseases needing surgical interference in the presence of infection of the respiratory tract. In the acute cases there is infection of the nasopharynx with a thick purulent discharge from the nose, making breathing through the nose very difficult and sometimes impossible. Also, many cases are complicated by the presence of either lobar or bronchopneumonia. For the reasons just mentioned it is believed that nitrous oxide is the anesthetic agent to be used above all others in cases requiring operation for mastoiditis.

Nitrous oxide has a less deleterious action on the tissues of the body than any other anesthetic agent. The functions of the organs are less disturbed during administration, the oxygenation is more nearly normal and there is less possibility of acidosis, than with ether or chloroform, which are lipoid solvent agents. There is no chemical change in the blood as nitrous oxide is simply in solution in the blood stream and as a result there is no added work on the organs of excretion. The improper oxygenation in ether or chloroform narcosis is responsible for the many complications following operation.

In cases complicated with nephritis or diabetes nitrous oxide, of course, is the anesthetic of choice. During operation on acute cases it is not uncommon to see blood and pus drain from the nose, more probably remaining in the nasopharynx, which is a constant source of danger; but with nitrous oxide anesthesia it is possible to have the patient sufficiently anesthetized not to feel pain, yet having swallowing reflex present, thus eliminating the danger of infected material gaining access to the respiratory tract.

LACERATION OF TRANSVERSE COLON BY ADHERENT OMENTAL BAND

DR. N. P. DAVIS

Patient J. C., aged 64. Referred by Dr. J. W. Probst. He had had an inguinal hernia for more than twenty years. The sac always filled with intestine or omentum when he stood and emptied spontaneously when he would lie. The contents could always be pressed back and easily held by the patient's hand. His occupation was that of carrying a box of fruit and selling it from house to house. In the course of a day he lifted the box to and from his shoulder many times. On the morning of October 29, 1920, he ate a large number of sweet grapes and went to work as usual. At about 12:30 p. m. he had sold his fruit and on his way home stopped at a comfort station to empty his bladder. During the act of voiding he experienced sudden violent general pain in his abdomen. He walked home and went to bed. As soon as this pain came he had a sharp sensation of straining and his abdominal muscles were so rigid that the hernia sac filled and was tense. Previous to the onset of pain his hernia was down but was not tense or painful. His severe pain was continuous up to the time of operation. At 4 p. m. the family physician was called and the patient sent to the Mercy Hospital. He strained and cried constantly because of the pain in his abdomen, holding his abdomen with both hands at the level of the navel. In the right groin and scrotum there was a mass the size of a small orange. The mass was tympantic on percussion and intestine could be palpated in the sac. The intestine was easily replaced and the tip of three fingers passed into the relaxed internal ring. After reduction a clump of tissue remained irreducible in the sac. This remaining tissue was dull on percussion. Pulse 120, temp. 99, resp. 30, B. P. 130/80.

Ether was given and the hernia canal opened. The sac was large and of the indirect variety. The sac contained no intestine but much brown liquid fecal matter, containing grape seeds and grape skins was found. Adherent to the fundus of the sac was a heavy band of great omentum. The omentum was separated from the sac and reduced. Retraction of the internal ring showed no perforated loop of bowel. The sac was closed and sutured loosely with drainage. Incision was then made through the right rectus muscle close to the median line. Many ounces of liquid and partly digested grapes were found everywhere in the general peritoneum. A search of the small intestine showed no opening or evidences of injury. Examination of the colon showed an opening about at the center of the transverse portion. The opening would admit a thumb. Many seeds and skins were seen through this opening, but the intestine was soft and normal around the opening.

In searching for a cause, it was noticed that the band of great omentum which had been adherent in the hernia sac had its upper attachment at the lacerated section of the colon, and that this band was firm and large. The entire transverse colon was held high and could not possibly have entered the sac of the hernia. The colon was filled with grape skins, seeds, and brown liquid fecal matter. The opening was closed and overwhipped with cat gut. With dry pads the peritoneum was dried at every point. The stomach and duodenum were normal. The abdomen closed with drainage, the entire procedure required 55 minutes.

At the close of the operation his pulse was 130 and of fair volume and the skin was relaxed and warm. Stimulants and general treatment to prevent shock were given. Shock with weak rapid pulse and cold skin followed and he died at 2:30 a.m., nine hours after operation.

A review of the facts suggests the following conclusions: 1. That this patient would not have lost his life had his hernia been repaired when a diagnosis was first made twenty years previously. 2. Perforation of the ileum or first half of the colon is followed by a rapid and virulent grade of peritonitis and a bad prognosis.

FOCAL INFECTION IN RELATION TO OCULAR DISEASE

DR. C. W. JENNINGS

As our knowledge of focal infection has broadened, the list of structures possible of involvement has lengthened until we have come to recognize that almost no organ in the body is immune from attack. The eye is no exception to the rule and we have evidence of every part of this structure being affected.

William Lang, in 1910, in a discussion of alimentary toxemia from notes on 10,000 private patients, found 215 cases of inflammation of the eyeball attributed to sepsis, and of these the source in 139 was due to pyorrhea. In the 215 septic cases the iris was infected 87 times, the ciliary body 79 times and the choroid 68 times.

Charles Goulden, in a study of the uveal tract along similar lines, of 6,835 patients treated for various eye affections, observed 142 cases of iridocyclitis, 64 due to septic teeth, 14 others to gastric ulcer, gastro-enteritis, colitis, tonsillitis, rhinitis, bronchitis, etc. and he goes on to state that occurrence of an infection of a mucous membrane and an inflammation of the uvea in so large a proportion of cases is at least suggestive and effects of treatment so beneficial that the connection can scarcely be denied.

Though many organisms exist in the mouth, numbers of which have been reported as causing ocular diseases, the streptococcus, pneumococcus and staphylococcus are probably most frequently responsible. S. H. Browning has been impressed with the frequency of pneumococcus infection in cases of pyorrhea and eye disease. He goes on to say that the susceptibility of the eye to pneumococcal infection may perhaps account for the fact that pyorrhea causing eye disease is more often associated with pneumococcal infection than pyorrhea not causing eye disease.

Dr. Frank Billings regards systemic disease, due to a focus of infection anywhere, as probably always hematogenous and that a chronic alveolar infection and chronic foci in other regions also may cause systemic disease by hematogenous bacterial emboli which infect and at the same time deprive the tissue of nourishment.

CASE REPORT

Miss C—, age 51, was first seen in July, 1916, when her vision was so poor that she had to be lead about. The trouble began four months previously—March 7, 1916—when she noticed an oval, ring-like opacity in front of left eye. One week later this had increased until it was like a thin black veil. In April, she had a crown taken off the left lower molar but the dentist would not extract it. About six weeks later this tooth was removed. The teeth were then examined and some crown and bridge work done. Eight weeks subsequent to the involvement of the left eye the right was similarly involved. X-ray showed apical abscesses upon the upper and lower bicuspids, one or two of the molars and these were removed.

Eye examination: Pupils O U 2 mm; annular synechiae with deposit of plastic material in pupillary space. Iris details slightly indistinct: deposit on Descemet's membrane. Tension normal. Fundus details could not be seen. Following the removal of the teeth and under treatment for the eye condition and careful diet the synechiae began to loosen and the exudate to be absorbed.

Five weeks following admission to the hospital the vision was OD 6/15; OS 6/20. Two months later OD 6/12; OS 6/9. Ten months later vision in each eye with correcting lenses was 6/5.

The next most common type of ocular disease is that in which a single more or less large patch of choroiditis appears, accompanied by deposit upon Descemet's membrane.

This is illustrated in the case of Mrs. C. H., age 23. States that for one week past vision in the right eye has been failing. It was incident with an attack of coryza. Sinuses negative; has never had tonsillitis. Tonsils atrophic. Urine normal; digestion good;

chest and heart and blood vessels negative; Wassermann negative. Lower left molar has been devitalized. X-ray of this tooth revealed a large periapical abscess.

Eye examination: Vision OD 6/30. There is a triangular deposit upon the posterior surface of the cornea and many various sized floating opacities in the vitreous which is so hazy that no fundus details can be seen. Following removal of the tooth and under local and general treatment, the opacities began to clear so that an irregular oval area of recent retinochoroiditis down and in from the disc can be made out. The patient is still under treatment and the vision is OD, when last seen, equals 6/9.

In August, 1910, S. K. came to the office complaining of progressive dimming of vision for the past three months. Owing to great pressure of business and much anxiety had been unable to come before. He stated that upon numerous occasions of late he had had rainbow vision attended with a little pain in the brow and feeling of pressure in the eyeball and at such times his vision was more hazy. Vision OD 2/60; OS 1/120. Cornea was slightly anesthetic, vitrious was so full of floating opacities that fundus details could not be made out. He was taken to the hospital and placed upon treatment with no improvement and with continuance of pain.

Two weeks later a broad iridectomy was made and treatment with salt injections, hot packs, eserine, etc. The case was thought to be one of choroiditis with possibly some retinal involvement. By the use of miotics the tension was maintained at normal but upon stopping it rose to 39 mm. In six weeks following the iridectomy the tension again rose to 40 mm., with steamy cornea and all the appearances of acute glaucoma. Paracentesis of the cornea was done and the tension returned to normal and all symptoms subsided. This latter measure had to be done upon three occasions at intervals varying from three to six weeks. He had also some cardiac disease with attacks of palpitation. Finally his teeth and sinuses were investigated. The right antrum was found to be full of pus, and he had a very bad pyorrhea with many periapical abscesses.

The diseased teeth were removed and following their removal the sinus drained itself and the vitreous exudate began to be absorbed. It was then possible to see a large area of chorioretinitis between the macula and the nerve involving the macula. His vision in the right eye has risen until at present it equals 6/12 with ability to read. Remarks: This case is one unquestionably secondary to dental disease.

The tonsils, owing to their position and structure, are most prone to infection and in many cases, as it is impossible to determine whether they or the teeth are primarily at fault must be carefully examined. If we have a streptococcus infection in the nose and throat we may have simultaneously or secondarily an infection of the teeth. Errors in diet and pyorrhea alveolaris in obscure and intractable cases of uvetis for which we cannot account, necessitate a most thorough and painstaking investigation of this tract. Frederick B. Utley, Secretary.

IN MEMORIAM

At a special meeting of the Butler County Medical Society held January 31, 1922, a committee composed of the undersigned was appointed to draft the following resolutions:

Whereas, An omnipotent God has taken unto Himself our colleague and fellow member, Dr. A. M. Heilman, the Butler County Medical Society wishes to pay tribute and respect to his memory and his life work among us; therefore, be it

Resolved, That in the death of Dr. Heilman the Society loses an active and intelligent coworker, the profession an honorable member, and the community a respected and progressive citizen. And be it further

Resolved, That we respectfully extend to his wife and family our sincere sorrow in their grief, and that this record be spread upon the minutes of our proceedings, a copy sent to his wife and family, and published in the local press.

Robert B. Greer,
E. L. Wasson,
Ebert T. Simpson,
Committee.

EMPYEMA OF THE ANTRUM OF HIGHMORE SECONDARY TO THE EXTRACTION OF TEETH

Treatment of infection of the antrum through an alveolar fistula does not seem advisable to Horace R. Lyons, Rochester, Minn. (*Journal A. M. A.*, Feb. 18, 1922). If the antrum has become infected, adequate intranasal drainage gives infinitely better results. Care should be taken to avoid the formation of a permanent alveolar fistula. An alveolar fistula may be closed after treatment has cleared up the empyema of the antrum.

OUTBREAK OF EPIDEMIC JAUNDICE AMONG COLLEGE STUDENTS

Ira V. Hiscock and Orville F. Rogers, New Haven, Conn. (*Journal A. M. A.*, Feb. 18, 1922), report an epidemic of sixty-nine cases of infectious jaundice, all but six of which occurred within a period of fifteen days. The most prominent symptoms were pronounced weakness, loss of appetite and the appearance of the jaundice itself. It appears that the majority of the sixty-nine cases reported originated in contact infection either by direct transfer from person to person or in some instances, perhaps, by infection of eating utensils at two eating clubs patronized by the majority of the students affected.

A CASE OF MULTIPLE CRANIAL NERVE PALSY DUE TO EXTRACRANIAL DISEASE

The case reported by Lewis J. Pollock, Chicago (*Journal A. M. A.*, Feb. 18, 1922), resembled, clinically, the syndrome of the retroparotid space in that, in addition to the involvement of the last four cranial nerves, the cranial sympathetic was affected. As there were no changes in pulse, respiration, secretion or sensation of the soft palate and pharynx, that part of the vagus having to deal with these functions was unaffected.

FUNCTIONS AND SCOPE OF AN INDUSTRIAL CLINIC IN A GENERAL HOSPITAL

The great function of an industrial clinic Harry Linenthal, Boston (*Journal A. M. A.*, March 12, 1921), says is to trace the part industry plays in producing the more common diseases seen in all classes of the community. If the effects of industry were only in the production of the specific occupational diseases, the problem would be comparatively easy and relatively unimportant: Easy, because the causal relation between the industrial condition and the resulting disease is manifest. Relatively unimportant, because the number of workers engaged in processes giving rise to specific industrial diseases are few in comparison with the vast army of workers who are exposed to the less specific hazards of irritating dust or fumes, of localized fatigues, of insanitary conditions, or who are constantly subjected to the monotony and general fatigue effects of modern industry.

SURGICAL OPERATIONS ON AGED SUBJECTS

The average age of the patients operated on by Robert M. Culler, Fort Sill, Okla. (*Journal A. M. A.*, April 2, 1921), suggests that senility may not be a bar to surgical procedure as often as is commonly supposed, and that certain physical defects in old age are remedial without the high mortality rate anticipated by many. His experience with these old men inclines him to the belief that aged people are often passed by who may be salvaged without more than ordinary surgical risk, and that disaster in such cases is often borne out of delay and compromise. Careful preoperative scrutiny, speed in the operating room, and painstaking after-treatment will reduce risks which are derived from cardiorrenal defects and other concomitants of age. The ages of these patients varied from 47 to 81; the average was 67.06 years.

TREATMENT OF AORTIC ANEURYSM BY WIRING AND ELECTROLYSIS

Three cases of sacculated aneurysm of the aorta successfully treated by wiring and electrolysis are reported by Hobart Amory Hare, Philadelphia (*Journal A. M. A.*, Feb. 26, 1921). He emphasizes that one of the most important effects of the operation is the relief of pain, which usually occurs almost at once in every case.

WRONG DIAGNOSIS

One with sore throat (in whisper): Are you Dr. Jones?

No! But I can tell you where you can get some.

COMMUNICATIONS

NOTICE

CALL FOR VOLUNTEER PAPERS

SCRANTON SESSION

The Committee on Scientific Work at its first meeting at Harrisburg, February 1, 1922, instructed that a call be issued for eleven volunteer papers for the Scranton Session of the Medical Society of the State of Pennsylvania, October 2 to 5, 1922.

(1) The subject and a brief outline of all papers must be furnished the Committee before May 1, 1922.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman*,
5321 Fifth Ave., Pittsburgh, Pa.

To the Editor of The Pennsylvania Medical Journal:

Sir: It was properly moved and passed, at the last business meeting of the Philadelphia County Medical Society, that the following report be sent you for publication in the Journal.

Yours very sincerely,
Chas. Scott Miller,
Clerk of the Board.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION

January 18, 1922.

Mr. President and Members of the Philadelphia County Medical Society:

Your committee has had a number of meetings at which the problem of medical education was discussed. As the result of its deliberations, the committee would present the following report:

It is generally admitted that there is a scarcity of doctors, especially in the rural districts and small towns of Pennsylvania, as well as elsewhere in the United States. Even in the cities there are not enough men to serve as interns, as physicians in outpatient departments, and in junior positions in hospitals. Authorities differ as to the proper ratio of physicians to population, some giving it as 1 to 500 and some as 1 to 700. A fair average would probably be 1 to 600. There is at present in Philadelphia one physician to every 526 persons, in Pittsburgh one physician to every 447 persons, and throughout the state, including these two cities, one physician to every 768. When the population of Philadelphia and Pittsburgh is subtracted, then there is in the state only one physician to every 947 inhabitants, or practically one to 1,000. These figures, however, do not express the actual ratio of practicing or "callable" physicians in the state, since at the present time many, though registered as physicians, do not directly minister to the general needs of the community, such as full time teachers, laboratory men, some specialists, and men engaged in insurance work and in industrial medicine.

There are many reasons for the scarcity of physicians. Among them may be mentioned the following:

A. The reduction in the number of medical schools throughout the country, which since it was accomplished by the elimination of the poorer schools is worthy of commendation.

B. The war.

C. Limitation in the number of students accepted by the best medical schools.

D. The long time required to obtain a medical education and the license to practice.

E. A special reason for the scarcity of doctors in rural communities in addition to those given above, is that capable men are deterred from settling in country districts because of the lack of proper hospital facilities.

As a result of the foregoing causes and others not herein mentioned, the small cities and towns and villages are greatly in need of physicians. It was reported at meetings of the committee that there is a town of 3,500 population in Pennsylvania with only one physician, and another of 2,500 with only one physician, and one of fair size in Maryland without any physician. The lack of trained medical men has led to the influx of quacks and irregular practitioners.

The committee feels that the Philadelphia County Medical Society should go on record on these matters, and to that end respectfully submits the following resolutions:

1. It is desirable to increase the number of students admitted to medical schools.

2. Extra-urban practice should be made more valuable and more attractive by erecting modern hospitals throughout the state, placing them with due regard to the needs of the communities.

3. College, as well as primary and secondary education, should be speeded up so that men and women may be able to enter medical school at an earlier age.

4. The committee recommends that a survey be made of the physicians in Philadelphia to determine how many are actually engaged in family practice.

Respectfully submitted,
THOMAS MCCRAE,
WILLIAM PEPPER,
JOHN H. GIBBON,
DAVID RIESMAN, *Chairman.*

THE BEST TESTIMONIAL

"Do you guarantee results in your nerve treatment?" asked the caller.

"You bet I do," replied the specialist. "Why, last week a man came to me for nerve treatment, and when I'd finished with him he tried to borrow $50 from me." —*N. Y. Globe.*

BOARD OF TRUSTEES

At the meeting of the Board held in Harrisburg, February 1, 1922, communications from the Medical Advisory Committee, relative to the policy of the American Medical Association, were read and the following motion was passed, with instructions that it be published in the PENNSYLVANIA MEDICAL JOURNAL:

"*Resolved,* That the delegates from the Medical Society of the State of Pennsylvania be instructed by the Board of Trustees to preserve a conservative attitude in the matter of reorganization of the American Medical Association, as put forward by the Medical Advisory Committee, and that they be guided in their action by the advice of the President-elect, Dr. de Schweinitz."

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA BOARD OF TRUSTEES

HARRISBURG, PA., February 1, 1922.

To the Pennsylvania State Board of Examiners for Registration of Nurses:

Last fall the attention of the Board of Trustees of the State Medical Society was called to some questions affecting the training of nurses, the shortage of applicants and other matters relating thereto. After full discussion of the matter, it was felt that a committee of the Trustees should be appointed, and a study of the subject made, as any other course would lead to an expression of individual opinions of a few people, having no particular weight with those to whom it might be addressed. The committee selected, desired to make a report which should be in the nature of a constructive critique, based upon the opinion of heads of training schools, superintendents of hospitals, and physicians interested in hospital work and training school methods. The committee prepared a questionnaire and accompanying letter, copies of which are attached, inviting opinions upon some of the basic fundamentals of training school activities. This questionnaire was sent throughout the state to the people enumerated in the above groups.

In submitting a digest of the opinions received, the committee has carefully avoided any expression of their personal opinions, realizing that these are of no more value than statements from a similar number of other persons; rather has the committee attempted to outline in this report the average opinion, carefully avoiding arguments or extreme points of view. The committee believes that a composite view thus obtained, merits the careful consideration of those to whom it may be addressed.

A brief analysis of the questionnaire replies follows:

TABULATION OF QUESTIONNAIRE REPLIES

(1) What is your opinion of the number of hours devoted to the following subjects, in the "Curriculum and Requirements for the Training Schools in the State of Pennsylvania, Formulated and Adopted July 9, 1920"?

	More Hours	*Non-commital*	*Satis-factory*	*Not Satis-factory*
Nurses	11	8	22	32
Physicians	0	8	8	46
Totals	11	16	30	78

(2) Are patients afforded proper care and attention, during absence of nurses from rooms and wards of the hospital, incident upon the number of hours required for theoretical instruction, as outlined in Curriculum and Requirements?

	Satisfactory	*Not Satisfactory*
Nurses	40	21
Physicians	26	32
Totals	66	53

(3) What do you consider should be the minimum preliminary education for admission to a training school?

	Grammar	*One Year High*	*Graduate*
Nurses	9	52	7
Physicians	17	29	13
Totals	26	81	20

(4) Are you in favor of two or three years for the course for graduates in nursing?

	Two Years	*Three Years*
Nurses	9	63
Physicians	28	32
Totals	37	95

(5) Are you in favor of a course for the so-called "trained attendant"?

	Affirmative	*Negative*
Nurses	26	44
Physicians	36	26
Totals	62	70

(6) Do you consider the eight hour day practical for the student nurse?

	Affirmative	*Negative*
Nurses	47	27
Physicians	21	38
Totals	68	65

(7) Is there a shortage of nurses in your training school?

	Affirmative	*Negative*
Nurses Physicians	80	51

The responses to the first question showed the extreme variation which would naturally be expected; without exception those favoring an extension of the present curriculum were a few training school officials, though 50 per cent of the replies from these officials indicated a preference for a reduction of the present course of study, while a smaller number were fairly well satisfied with the existing conditions, suggesting only minor changes. The replies from physicians indicated an overwhelming desire for a reduction in the amount of theoretical instruction required. Both groups objected to the extent of the present curriculum and there was a constantly reiterated belief that many subjects were included which were unnecessary and that any attempt to teach these subjects could, at best, be merely time consuming and result in no appreciable advantage to the nurse's equipment for the performance of her ordinary duties. It is a matter of interest to note that some of those who favored an extension of the course of theoretical instruction, favored a reduction in the amount of time devoted to hospital housekeeping, sanitation, massage, nursing in nervous and mental diseases, etc. While representing the extreme point of view, a very much larger number of criticisms were aimed at the increase of theoretical instruction of recent years at the expense of practical training, with the often expressed belief that the nurse's efficiency was reduced thereby. The relative frequency of these various criticisms is indicated in the tabulated statement of replies.

To the second question the tabulated replies indicate the feeling of those answering the questions. It is obvious that the replies to this question will vary according to the conditions maintaining at various hospitals of the state, and that they are more fairly representative of local conditions than illustrative of the effects upon hospital care of training school activities, though there is a frequent expression of opinion that with a shortage of nurses prevailing in certain hospitals, it is impossible to meet adequately all conditions, namely: amount of time required to complete curriculum, proper care of hospitals and patients, time off duty for nurses, etc. It is equally apparent that in certain hospitals lessened time for theoretical instruction would allow more time for other service. There is an undercurrent of feeling expressed throughout the replies that the principal function of the hospital, mainly the care of sick patients, should not suffer for the promotion of any secondary aim. It is apparent that in many hospitals of the state, it is impossible to meet the nursing board requirements and maintain this function at its highest level.

Tabulation of answers to the third question do not fully indicate the composite statement of those replying, which is, perhaps, something as follows: those with the highest educational attainments are best equipped to meet the requirements of nursing service in its various fields and those equipped with full high school course, or a fraction thereof, must necessarily have the advantage over those with common school training; but many of those favoring one year of high school or more as an ideal requirement, appreciate that there is a dearth of applicants for the work which must be performed in the various hospitals of the state, and many arguments are presented for leaving the bars down for admission to the training schools of young women with country school training, who have not had the advantages of a high school course but, who, nevertheless, because of domestic training, capacity for work and general usefulness, make excellent nurses in no way secondary for bedside and hospital work to their sisters more favored in matters of education. It must be appreciated that, in the present state development of educational opportunities, much available material specially adapted to the smaller hospitals throughout the state, will be lost to the hospital service with no corresponding advantage to the nursing body, if girls with common school training are denied admission. Temperament, natural capacity and good intentions are fundamentals which cannot be guaranteed by high school training. It is a commonly expressed opinion, that the shortage of applicants in hospital work in Pennsylvania, should not be increased by eliminating the common school nurse who possesses the necessary qualifications of character, ability and sufficient knowledge of the English language to meet the examination requirements necessary for developing standards of nursing required in hospitals and private practice.

Questions relating to the length of time that should be devoted to training, show a considerable majority of the total figures in favor of the three years' course, the nurses' preference for this period being overwhelmingly in favor, while the physicians' opinions are about equally divided between the two and three years' courses. Many of the physicians believe that a two years' course furnishes ample opportunity for training a nurse in all requisites for ordinary nursing work, and that this equipment is all that the average hospital should be expected to give; that further postgraduate work for those with good educational requirements might well be arranged to cover an extended course which might possibly lead to a B.S. degree, thus allowing full individual scope for the attainment of any purpose which the best educated and most ambitious nurse might desire to achieve. There is a very commonly expressed opinion that postgraduate training, following a regular training school course, is essential for those nurses who wish to take up special work with any satisfactory qualification for that work.

The answers to the fifth question must be more or less considered with those of the fourth. There is a reasonable majority condemning the "trained attendant," and many good reasons are given for the impracticability of associating under the same roof, two bodies of young women so thoroughly differentiated as "trained attendants" and "registered nurses." There are many opinions given to the effect that there should be some different arrangement than now exists for the training of nurses equipped for general nursing and hospital work, and many favor a shorter course for the so-called "practical nurse," while favoring a longer course for the registered nurse. Some believe that a course of two years should qualify any nurse for the work which a registered nurse is now supposed to perform, and that postgraduate courses should be arranged to qualify ambitious and well educated nurses to acquire any training which they might desire for special work, such as heads of training schools, superintendents of hospitals, public health work, anesthetists, laboratory assistants, etc. These conclusions accord with those obtained in answers to the fourth question.

In response to the sixth question, the opinions are practically evenly divided, though a large majority of physicians are opposed to an eight-hour day, and none of them favoring this show how hospital work can be conducted with a shortage of nurses and the consequent restriction of daily output. No evidence is submitted to indicate that the adoption of an eight-hour day anywhere has resulted in any increase in the number of applicants for nurses' training. Many opinions are given that if more compensation were paid and increased attention given to social recreation connected with hospital work, more applicants might be obtained. Many comments are made upon the rigid discipline of those who supervise the general activities of the young women in training. Naturally, this raises a question which has not been answered by those who consider the necessity of such supervision as one of the training school fundamentals.

In answer to the seventh question, there is undoubted evidence of an extreme shortage of applicants for nurses' training throughout the state. Naturally, this is an individual hospital problem; the hospital, no more than other institutions, appeals equally to all classes of applicants and necessarily those hospitals which offer the greatest inducements will have the greatest number of applicants, and their training methods and results will attract the highest grade of pupil nurses, while those less fortunate in their attractive features, will be short of applicants. That this shortage exists to-day in considerably more than half of the hospitals of Pennsylvania, is adequately proved by the replies received. The reasons given for the shortage are almost as many as the persons replying, but an analysis of these answers shows that many applicants consider the course too long, too hard and entrance requirements excessive in view of the restricted number of applicants and higher wages paid in other fields of effort, together with repetition of the statements made in answer to the sixth question. Some think that the shortage is temporary, though in the hard times of the past year, with general unemployment, there seems to be little probability that there will be any increase in the number of applicants when affairs once more return to normalcy. In addition to the answers returned on the questionnaire, the committee has received a flood of letters from prominent physicians throughout the state, who are actively interested in conducting hospital work, including hospital training for nurses. A digest of these opinions indicates that the physicians of the state believe that the hospitals are intended primarily to care for the sick, to render adequate nursing and medical attendance to patients, and not to act as educational institutions, except as this work can be conducted without interfering with the proper conduct of the hospital; further that an adequate course containing a minimum of theoretical instructions with an increased amount of practical work, would be better for both nurses and patients. Quoting one writer, "It is an unwieldy curriculum that needs revision; five years would be needed to give thorough instruction in all the various subjects." Another, "The instruction required by the curriculum is intended for poor physicians rather than for good nurses." Another writer states, "Cut out the frills and nonsense in training," referring to several subjects which in the writer's opinion are beyond the requirements of nursing. Another writes, "Much of the teaching is impractical and imperfect, hence useless and is promptly forgotten by the pupils." Another writer states, "The course is too theoretical—should be more practical. A two years' course should be given and a third year should be arranged for special postgraduate work. Properly qualified grammar school applicants should be received." Similar opinions might be quoted in extenso, but those given indicate the trend of sentiment in replies received from personal correspondence.

This report is submitted by the committee as its well intended effort to secure opinions of those qualified for best judgment. It in no way expresses personal antagonism of the committee to methods now in vogue. It has the unquestionable value of being an analytic critique upon certain tendencies, with suggestions for the consideration of those desiring to improve conditions arising from the pursuance of these tendencies.

By the Committee,
Theodore B. Appel, M.D.;
Frank C. Hammond, M.D.;
H. W. Mitchell, M.D.,
Chairman.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

BOARD OF TRUSTEES

September 1, 1921.

The Medical Society of the State of Pennsylvania, through a committee of the Trustees, is making a survey of the nursing situation in the hospitals of the state. The committee solicits your aid in furnishing facts and opinions that may form a basis for a carefully studied report.

This review of the situation is in no sense to be regarded as a criticism of existing methods or tendencies, but rather as an interested effort to secure the common viewpoint and opinions of those most competent to express such opinions. To secure information that may be enlightening, frank statements are necessary and in every instance answers to the enclosed questionnaire will be treated confidentially by the committee, which hopes for your aid not alone in giving answers upon the enclosed form, but in submitting any further data or advice tending to aid the committee in giving the facts regarding training school conditions and formulating a composite opinion from those interested and responsible for this work in the state.

The committee hopes to receive your reply under enclosed envelope by September 15th.

Very truly yours,
Theodore B. Appel, M.D.;
Frank C. Hammond, M.D.;
Harry W. Mitchell, M.D., *Chairman.*
Committee of Trustees of the Medical Society of Pennsylvania.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

BOARD OF TRUSTEES

Questionnaire

(1) What is your opinion of the number of hours devoted to the following subjects, in the "Curriculum and Requirements for the Training Schools in the State of Pennsylvania, Formulated and Adopted July 9, 1920"? (In answering questions, kindly state number of hours you consider expedient in the given subject, or whether or not the subject should be discontinued.)

FIRST YEAR

Elements of Nursing	60 hours.	....
Historical, Ethical, Social Basis of Nursing	8 hours.	....
Personal Hygiene	4 hours.	....
Hospital Housekeeping	8 hours.	....
Elementary Chemistry	16 hours.	....
Anatomy and Physiology	60 hours.	....
Elementary Dietetics	24 hours.	....
Bacteriology	16 hours.	....
Elements of Psychology	8 hours.	....
Bandaging	10 hours.	....
Drugs and Solutions	16 hours.	....
Nursing in Medical Diseases	16 hours.	....
Nursing in Surgical Diseases	16 hours.	....
Materia Medica and Therapeutics	16 hours.	....
Sanitation	8 hours.	....
Urinalysis (Laboratory)	4 hours.	....

SECOND YEAR

Dietetics	8 hours.	....
Nursing Sick Children and Infant Feeding	16 hours.	....
Nursing in Orthopedic Surgery	8 hours.	....
Nursing in Obstetrics	16 hours.	....
Nursing in Gynecology	8 hours.	....
Nursing in General Surgery	8 hours.	....
Operating Room Technique	8 hours.	....
Nursing in General Medical Diseases	8 hours.	....
Nursing in Communicable Diseases	10 hours.	....
Nursing in Nervous and Mental Diseases	16 hours.	....
Massage	20 hours.	....
Nursing in Medical and Surgical Emergencies	8 hours.	....
Nursing in Diseases of Eye, Ear, Nose, Throat and Skin	10 hours.	....
Nursing in Venereal Diseases	4 hours.	....
Private Nursing	4 hours.	....

THIRD YEAR

Nursing in Communicable Diseases	10 hours.	....
History of Nursing and Ethics	8 hours.	....
Public Sanitation	8 hours.	....
Special Therapeutics	8 hours.	....
Professional Problems	4 hours.	....
Survey of the Nursing Field	4 hours.	....

(2) Are patients afforded proper care and attention, during absence of nurses from rooms and wards of the hospital, incident to attendance upon the number of hours required for theoretical instruction, as outlined in the above Curriculum and Requirements?

....

(3) What do you consider should be the minimum preliminary education, for admission to a training school?

....

(4) Are you in favor of two or three years for the course for graduates in nursing?

....

(5) A. Are you in favor of a course for the so-called "trained attendant"?

....

B. If so, should the course be one or two years?

....

(6) Do you consider the eight hour day practical for the student nurse?

....

(7) A. Is there a shortage of nurses in your training school? If so, what percentage?

....

B. If the above question is answered "Yes," to what do you attribute the present dearth of nurses?

....

(8) Number of graduate nurses in 1921 class.

....

(9) Number of student nurses in training.

....

(10) Kindly record any comments or suggestions you may wish to make upon either the questions raised or other related topics, tending to improve hospital nursing conditions.

....

....

....

....

....

....
Name and title of person submitting report

....
Name of hospital

....
P. O. Address

THE PENNSYLVANIA
MEDICAL JOURNAL

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MARCH, 1922

EDITORIALS

DEFECTIVE VISION AND INDUSTRIAL WASTE

The examination of school children in Pennsylvania as discussed in a paper by Dr. Thomas Finegan, read before the General Meeting of the Medical Society of the State of Pennsylvania, in 1920, revealed the amazing fact that 445,000 children have defective vision. If parents do not heed the notice of the school authorities, to have their children's eyes examined and corrected, then the child grows up to be listed among the 25,000,000 workers in nationwide industry with defective vision requiring correction.

In the past our efforts have been directed more towards the prevention and treatment of accidents than the correction of a basic fundamental cause, namely, defective vision.

The correction of visual defects has a close beneficial relationship to the pocketbook of employees and the profit account of employers.

The startling facts and figures of the importance of vision in industry compels one to call attention again to the "Report of the Committee on Elimination of Waste in Industry, of the Federated American Engineering Societies," of which committee Mr. Herbert Hoover was chairman. The report divides waste in industry into four classes. Our interest is in the fourth class, viz: lost production caused by ill health, physical defects, and industrial accidents. In this class comes defective vision, which the report estimates, affects more than fifty per cent of the average of 42,000,000 men and women employed in American industry.

A period of industrial depression provides the opportunity for corporations to consult with their medical staffs, which, by the way, should include an ophthalmologist, and to insist on employees with visual defects having them properly corrected, all applicants to be properly glassed, if necessary, before being finally accepted for permanent positions. The conclusions as to the mutual advantage of such a procedure are quite forcibly brought out in the Hoover report, viz: "The management of plants which have instituted correction of substandard vision have concluded that such correction produces an increase in return that will pay for its cost." At the Whiting Davis Company, after glasses had been fitted to 83.3 per cent of the employees, "an increase of 28 per cent in improved productivity was noted in comparing two months results." G. H. C.

THE DIAGNOSIS OF NEUROSYPHILIS

In recent years the problem of neurosyphilis has been concerned almost entirely with the principles and results of treatment. A recent article by Solomon in the Journal A. M. A. is very timely in the emphasis laid on the diagnosis of neurosyphilis and particularly on the interpretation of serological data. A blood Wassermann test is almost a routine in a searching clinical study of any kind; spinal puncture almost equally so in those cases presenting a neuropsychiatric complexion. Probably, therefore, more cases of neurosyphilis are detected now than formerly, and yet probably also a certain number of cases generally recognized in pre-Wassermann days are now being overlooked. It is commonly known that the blood Wassermann in neurosyphilis is frequently negative, but it does not seem to be so generally recognized that in certain cases, even active cases, the spinal fluid may be negative. One may find, therefore, unwarranted timidity or reluctance or refusal to make a positive diagnosis with a negative serology even in the face of positive clinical symptoms. The masterly clinical teachings of Erb, Romberg and Oppenheim bid fair to be forgotten, and the fault lies not with the laboratory but with the narrowed perspective of the physician. Whatever the reason may be, it is a matter of clinical knowledge that the serological tests may be entirely negative in vascular neurosyphilis, cerebral gumma, syphilitic epilepsy, syphilitic cranial nerve palsies, Erb type of spastic paraplegia and certain types of tabes—surely an important group of cases. There is still need for a careful history and physical examination. The Argyll-Robertson pupil is particularly an indisputable witness of the presence of neurosyphilis. Other pupillary signs, transient palsies, root pains, reflex disorders, alone or in various combinations, are strong evidence of the presence of neurosyphilis, especially if supported by a positive history or the absence of other known causes of similar conditions.

G. J. W.

COMMUNITY HOSPITALS

The problem of the uneven distribution of the product of our medical schools—the unwillingness of medical men to locate in small communities—is the subject of much thought and discussion. There is a trend in this discussion which is not toward the higher ideal. One hears that the cost of a medical education in time and in money should be lessened, the reason being given that poor boys can then study medicine and locate in the small towns.

This argument is fallacious, and the fallacy is evident to anyone who will study the conditions in any profession or business in our large centers. The ranks of the bankers, the lawyers, the business men, are being constantly filled with poor boys from the country and the reason (or one reason) is simple: there is no greater incentive to desire wealth than to have spent the first twenty years of one's life in poverty. Give the poor boys every chance indeed, but do not expect them to go back to the place from which they have but escaped.

The problem is deeper than the simple one of time and money necessary for good training. A feature which we have not seen discussed is, we think, the change in modern life which has been effected by the automobile. Much has been laid at the door of that famous Detroit tinsmith, yet no such progress in human affairs as has been made possible, largely by Mr. Ford's efforts, can be attained without far-reaching results. The automobile has changed the concept of distance. Before, a trip of fifty miles was an undertaking, now it is but two hours away. A trip to the nearest city to see a doctor was an event, now it is a good excuse to burn up some tire rubber. And so the country doctor sees his best patients evaporating to the nearest town, not for a broken neck, perhaps, but the serious incapacitating conditions are not what spell bread and butter to the general practitioner. Therefore, the country doctor's move is to locate in the large centers, choosing an office with plenty of parking space before the door.

Another factor we do not see mentioned in this discussion is that no matter how short and cheap a medical course could be conceived, we could not help but impress upon the student's mind the fact that a hospital is the only place to-day where certain diseases and all surgical cases can be properly handled. Therefore, our graduates are loath to locate where there are no hospital advantages, not because they are seeking the stimulus of the leaders in medicine nor the advantages to themselves which are reputed to be associated with a city practice in the way of libraries, etc., but because they realize, as indeed the general public is rapidly coming to realize, that a hospital is the only place for the proper treatment of sickness.

The answer to this problem seems to us plain. Let the community provide a hospital and there will be no lack of medical men. We do not have to go to Minnesota for illustration; Sayre, Clearfield, Danville, in our own state amply prove the point.

J. E. S.

SURVEY OF THE NURSING SITUATION IN PENNSYLVANIA

About six months ago the Board of Trustees of the Medical Society of the State of Pennsylvania appointed a special committee to make a survey of the problems of the nurses' training schools of the state. The report of this committee appears in this issue of the Journal. This survey included the curriculum as outlined by the State Board for Registration of Nurses, the shortage of nurses, the preliminary educational requirements, etc.

In order to accomplish the desired result, it was necessary to send a questionnaire to the various training schools in the state. In addition, letters were sent to many physicians, in order that a "composite" view could be obtained. The report is not an individual opinion of the committee, but is a carefully compiled epitome of opinions, based upon the replies thus received.

The Board of Trustees desires to extend grateful appreciation for the hearty coöperation received from the superintendents of hospitals, the directresses of the training schools and the medical profession.

There seems to be a misunderstanding by many physicians in regard to certain parts of the Act of Legislature, governing the Board for Registration of Nurses. The act requires only two years in a training school. It is the hospitals that have required the additional year. The preliminary educational requirements for admission are one year of high school, or its equivalent. The act provides for: 1. The registration of nurses who, if they pass the examination given by the Board, are permitted to use R.N. (Registered Nurse) after their names; 2. Licensed Attendants, who are permitted, if they pass the examination given by the Board, to place after their names L.A.

The Board is empowered to outline a course one year in duration for Licensed Attendants and such a course has been outlined for any institutions that desire to organize this course.

F. C. H.

EX LIBRIS MEDICI

THE FUNCTION OF THE LIVER

The other day we picked up a book out of which there stepped a doctor whose fund of common sense at once aroused interest. He seems to have been a competent medical man, but he knew much more than medicine—he understood human nature and how to get along with people. He is Sir Peter Lund, Bart., M.D., and is the chief character in Sydney Grundy's play called "A Fool's Paradise."

He cultivates a brusque exterior, is hard headed but soft hearted, and has about him the energy and doggedness of the world dominating Englishman.

In the play he is called upon to attend a young man suffering from peculiar and vague symptoms by which he is at first baffled, and in which he then becomes interested. Unable to solve the mystifying aspects of the case, he decides to devote himself to the patient, and remain with him at his house until things clear up. He does this with such energy and perseverance that he is finally able to prove that the malady from which the patient is suffering is arsenical poisoning, the result of an effort on the part of his young wife, to whom he is passionately attached, to get him out of the way in order that she may marry another with whom she is really in love.

The story will be found interesting reading for all, but the character of the doctor and his method of conducting himself with his patients are shown by the following excerpts:

In the first the patient, not feeling particularly ill at the moment, welcomes the doctor to his country home:

Philip (the patient).—"Welcome to Ravenhurst! I scarcely expected to see you so soon. You must have risen early this morning."

Sir Peter (the doctor).—"Always get up at five. How are you?" (to guests coming in).

Beatrice.—"Always get up at five?"

Philip.—"And never goes to bed before two. It's a marvel how you can do it!"

Sir Peter.—"It's a marvel to me how you don't do it. That's why you are out of sorts. You eat too much."

Philip.—"Sir Peter!"

Sir Peter.—"And drink too much!"

Philip.—"Sir Peter!"

Sir Peter.—"And sleep too much!"

Philip.—"Sir Peter!"

Sir Peter.—(turning to the ladies) "So do you."

Ladies.—"Oh!"

Sir Peter.—"Of course you do. Everybody does. What time is the next train up?"

Philip.—"You are not thinking of going already?"

Sir Peter.—"Certainly not! Not going for ten minutes."

Beatrice.—"Surely you stay to lunch?"

Sir Peter.—"What d'you want with lunch? If you've got an appetite for dinner, thank Heaven for it and don't go and spoil it with lunch!"

Beatrice.—"Do you never eat?"

Sir Peter.—"Eat? Like a cormorant!"

Philip.—"Drink?"

Sir Peter.—"Like a fish!"

Kate.—"Sleep?"

Sir Peter.—"Like a humming-top!"

Beatrice.—"But you say you oughtn't?"

Sir Peter.—"Well, do you never do what you oughtn't?"

The family then depart, leaving Sir Peter and his patient together, and the following conversation takes place:

Sir Peter.—"Well, what's the matter with you?"

Philip.—"Really, Sir Peter, that's what I want you to tell me."

Sir Peter.—"You have a high opinion of the medical profession. Do you suppose we can tell you anything if you don't tell us first?"

Philip.—"I have always supposed so."

Sir Peter.—"Error, sir. You tell us everything we tell you. The only difference is, you tell us in English, we tell you in Latin. You take a fee out of your pocket; we put it in ours."

Philip.—"Well doctor, I can't tell you what's the matter with me. I should very much like to know."

Sir Peter.—"Why? What's that got to do with you?"

Philip.—"A great deal, unhappily."

Sir Peter.—"Vulgar fallacy. A patient's complaint concerns nobody but his doctor."

After further verbal skirmishing, the conversation is continued as follows:

Philip.—"You are plain spoken, Sir Peter; now tell me with equal candor what is the matter with me."

Sir Peter.—"Shall I tell you the truth?"

Philip.—"Of course."

Sir Peter.—"I don't know."

Philip.—"Surely with your experience—"

Sir Peter.—"Sir, I have no experience."

Philip.—"Well, with your knowledge—"

Sir Peter.—"Sir, I have no knowledge. Knowledge is the monopoly of young practitioners. I have been doctoring for forty years; and now I stand here on your hearth-rug, sir, a monument of triumphal ignorance."

Philip.—"Nonsense, Sir Peter!"

Sir Peter.—"Sense, sir, sense."

Philip.—"Be candid and tell me frankly what is wrong with me."

Sir Peter.—"Your liver probably."

Philip.—"Only my liver?"

Sir Peter.—"Don't speak disparagingly of your liver, sir. That eminently respectable organ has been much misunderstood. It is commonly supposed to serve certain functions in the physical economy. Another fallacy! The liver was made, by a beautiful provision of nature, *for the benefit of the medical profession.*"

DEATH, INSANITY AND TAXES

The physician who is burning the proverbial midnight oil "working out" his income tax, is more cognizant than ever of the old saying that nothing is certain in this world but death and taxes. Sydney Smith once drew a striking picture of a sick man, in overtaxed England, lying on a taxed bed, in a taxed house, with taxed windows, taking his taxed medicine out of a taxed spoon, and barely escaping further taxation by the intervention of death. Truly, every physician now feels like "a sick man."

LYE POISONING

Occasional reports in the daily papers of poisoning occurring in infants and children who have partaken of lye serve to bring this potential danger prominently before the medical profession and the law makers of the state. Not one of the labels that accompany the several standard preparations of lye contains anything of warning as to its poisonous contents, nor does it suggest an antidote if poisoning has occurred.

Dr. Chevalier Jackson, of Philadelphia, has a heart stirring appeal in his article on "Esophageal Stenosis Following the Swallowing of Caustic Alkalis" printed in *The Journal of the American Medical Association,* July 2, 1921.

We feel that the matter is of vital importance and would direct the attention of the proper authorities to this matter.

A WORD TO THE WISE

The medical profession is reminded of the daily listing of operations that are scheduled in the hospitals of Philadelphia. This list is compiled at the College of Physicians and is on file there and at most of the hospitals early in the day, so that the physician may consult the list and map out a program for himself. The information is always cheerfully given free of charge. We feel that an occasional visit to the city will be practical and instructive to any doctor.

COUNTY ACTIVITIES

The Philadelphia County Medical Society, through its Committee on Public Policy and Legislation, has, during the past few months, succeeded in having four illegal practitioners brought before the Grand Jury and their cases are now pending. The nefarious activity of chiropractors and their strange cult is also being investigated.

It would be well, wherever possible, for every reputable physician to secure all legal evidence against irregular practitioners, this information to be filed with their Chairman of Committee on Public Policy and Legislation, or to be forwarded to the President of the State Board of Medical Education and Licensure, Dr. I. D. Metzger, 810 Westinghouse Building, Pittsburgh, Pa.

The Northumberland County Medical Society has set a splendid example by printing in its issue for January, 1922, a list of all regularly licensed physicians, osteopaths, chiropractors, midwives and irregular practitioners. This list shows that the efficient officers of that County Medical Society are on the job.

ERRATUM

On page 308, February number of The Pennsylvania Medical Journal, second column, the amount of liquid albolene used in the prescription should read one ounce instead of one drachm.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

MID-YEAR MEETING OF THE BOARD OF TRUSTEES

The Board of Trustees of the Medical Society of the State of Pennsylvania met in the offices of the Executive Secretary of the Society, 212 North Third Street, Harrisburg, Pa., on the first Wednesday in February. Reports from officers of the Society, from the councilor districts, as well as those of the Board's Committees on Publication, Finance, and Conduct of the Executive Secretary's Office, were indicative of increased interest in organization ideals throughout the state.

The Board after considerable discussion of a communication sent broadcast throughout the United States to medical organizations by the "Medical Advisory Committee," (see Journal of the A. M. A., January 21, 1922) recommended that the members of the Medical Society of the State of Pennsylvania and their chosen delegates to the 1922 Session of the American Medical Association should be guided by the advice (see page 425, this issue), of one of our own and most distinguished members, Dr. George E. deSchweinitz, who is President-Elect of the American Medical Association.

The Board reaffirmed its 1921 action regarding the collection and disbursement of funds contributed by the members of the Society to the Medical Legislative Conference of Pennsylvania, asking the secretaries of component societies to collect and remit the 1922 contributions from their respective societies to Dr. G. A. Knowles, Chairman, Committee on Public Health Legislation, 4812 Baltimore Avenue, Philadelphia, said moneys to be disbursed by Chairman Knowles under the direction of the Finance Committee of the Board of Trustees.

The Board also decided to extend an invitation to some member of the Board of Trustees of the American Medical Association to appear on the program of the first General Meeting at the Scranton Session.

Pursuant to instructions from the 1921 House of Delegates, the following committee was appointed to confer with Dean Meeker of the Postgraduate School of Medicine of the University of Pennsylvania, regarding the establishment of postgraduate work throughout the state during the winter of 1922 and 1923: Drs. Lawrence Litchfield, Theodore B. Appel, and Harry W. Mitchell. The Board also approved the continuation by the Committee on Scientific Work of the postgraduate programs inaugurated in the summer of 1921.

A draft of a bill being prepared by Solicitor Myers for presentation to the 1923 Legislature, aiming at centralization of the present Pennsylvania systems of licensure in the healing art was discussed and endorsed by the Board.

A special committee from the Board which was appointed in February, 1921, to study and report on curricula for Nurses' Training Schools, presented its final report and recommendations. This splendid survey was enthusiastically received and ordered published in this issue of the JOURNAL, and reprints forwarded to the various training schools of the state.

The committee created by the 1921 House of Delegates and appointed by Ex-President Jump to revise the Constitution and By-Laws was invited to confer with the Board at the latter's May meeting.

COUNTY MEDICAL SOCIETY DUES

The 1922 dues of a large percentage of the members of this Society are due and have been overdue since January 1st, last. If such dues are not in the hands of the secretaries of the various component societies in time (March 28) to be remitted by March 31 to the Secretary of the State Society, such members will be without protection against suits for alleged malpractice. Possibly two years from now, you may be sued for alleged malpractice occurring subsequent to January 1, 1922. You would surely be greatly chagrined to find yourself without protection for the period elapsing between January 1, 1922, and the date of your delinquent payment. (Any date after March 31, 1922.) Avoid this possibility by paying your county medical society dues today.

SCRANTON 1922

If the determination to please is a criterion upon which to base the prospects for a successful annual session, then this year's meeting will be a brilliant triumph. Never have we heard such enthusiastic advance talk as that put forth by the representatives of the Lackawanna County Medical Society. They boast of their plans for our uplift and entertainment, of the match-less scenic beauties of the motor roads leading to Scranton, and finally of certain pathological conditions endemic in the northeastern section of the state that are to be massed in clinical demonstrations for the enlightenment of the less fortunate members of the Society residing in other parts of Pennsylvania.

Needless to state the entire Scientific Work Committee reacted promptly to this stimulus and at the end of a three hour session had outlined a three day program that gives promise of excelling the splendid success of 1921.

PRELIMINARY RATING

The secretaries of most of the component societies are ambitious to have the name of their society appear in the list of county societies whose annual dues are 100 per cent paid within the prescribed period—March 31st of the current year. By glancing down the following list of counties, you will learn just what the prospects are for your county society entering the desired class. The following figures indicate the percentage based on the 1921 membership, of 1922 dues received February 24, by the State Society Secretary:

Greene	108%	Butler	48%
Sullivan	100%	Westmoreland	48%
Adams	84%	Juniata	46%
Union	87%	Blair	44%
Mercer	83%	Cambria	41%
Wyoming	75%	Columbia	41%
Montour	74%	Cumberland	38%
Delaware	78%	Venango	38%
Lehigh	73%	Bedford	35%
Northumberland	73%	Center	34%
Warren	72%	Fayette	33%
Clarion	70%	McKean	32%
Northampton	68%	Clearfield	30%
Montgomery	67%	Luzerne	28%
Wayne	67%	Crawford	27%
Potter	66%	Snyder	25%
Carbon	65%	Beaver	24%
Berks	62%	Franklin	24%
Bucks	61%	Erie	22%
Clinton	61%	Washington	11%
Lycoming	61%	York	8/10ths of 1%
Mifflin	61%	Chester	0%
Bradford	60%	Indiana	0%
Armstrong	57%	Lackawanna	0%
Allegheny	56%	Lancaster	0%
Dauphin	56%	Lawrence	0%
Somerset	55%	Lebanon	0%
Clearfield	53%	Monroe	0%
Elk	53%	Perry	0%
Huntingdon	50%	Philadelphia	0%
Jefferson	50%	Schuylkill	0%
Susquehanna	50%	Tioga	0%

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to February 15:

Allegheny: *New Members*—James Balph, Jr., 3201 West Liberty Ave., Dormont; Robert S. Donehoo, 318 Chartiers Ave.; George W. Lang, 1436 Potomac Ave.; Eli W. Goldstein, 1554 Center Ave.; Adam C. Williamson, 378 Lehigh Ave.; Simon L. Victor, 3107 Center Ave.; Charles S. Textor, 629 E. North Ave., N. S.; Voigt Mooney, 3558 Campus St.; Thomas W. McConnell, Jenkins Bldg., Pittsburgh; John W. Hawes, Renton; Arthur R. Shuster, Clairton; Charles J. Jacquish, Columbia Hospital, Wilkinsburg. *Removal*—William J. McConnell from Washington, D. C., to 4800 Forbes St., Pittsburgh. *Resignations*—James P. Shaw, Frick Bldg.; Isolde T. Zeckwer, 135 N. Craig St., Pittsburgh; Wilmer D. Abrams, Rochester, Minn.; Charles F. King, McKeesport. *Deaths*—Andrew J. Barchfeld (Jeff. Med. Coll. '84), of Pittsburgh, killed in Washington, D. C., January 28, aged 59 years; William H. Rodgers (Jeff. Med. Coll. '03), of Pittsburgh, recently, aged 45; John C. Hartman (Univ. of Pgh. '99), of Pittsburgh, April 23, 1921, aged 48; James P. Blackburn (Univ. of Penna. '91), of McKeesport, January 23, aged 59; John L. Wessels (Univ. of Pgh. '88), of Pittsburgh, February 2, aged 66.

Berks: *New Members*—Adam M. Robinhold, Hamburg; Ralph L. Reber, 147 N. Fourth St.; LeRoy W. Frederick, 418 N. Tenth St., Reading.

Butler: *Death*—Arthur M. Heilman (Univ. of Penna. '02), of Butler, in St. Petersburg, Fla., January 30, after a long illness, aged 43.

Cambria: *New Members*—Ray D. Saul, 191 Lunen St., Johnstown; Perry O. Hall, Lilly. *Reinstated Member*—Patrick J. Kelly, Patton.

Clearfield: *New Members*—Jonathan A. Currier, Grampian; Blair G. Learn, Ansonville. *Transfer*—Loyal L. Liken, Smith Mill from Clinton Co.

Columbia: *New Member*—Ruth Tustin, Bloomsburg.

Dauphin: *Removal*—Peter B. Mulligan from Harrisburg to 706 Center St., Ashland.

Delaware: *Death*—Henry C. Bartleson (Jeff. Med. Coll. '70), of Lansdowne, recently, aged 78. *New Members*—Kirksey L. Curd, 1418 W. Third St., Chester; Ernest L. Clark, 19 Washington St., Media.

Fayette: *Transfer*—W. Sturgis Frankenburger, of Carmichaels, to Greene County Society.

Franklin: *Resignation*—John H. Mayer, Chambersburg.

Greene: *New Members*—George W. Teagarden, Wind Ridge; W. B. Clendenning, Jollytown.

Huntingdon: *Transfer*—I. Swartz Plymire of Petersburg from Bucks County Society.

Jefferson: *Reinstated Members*—Francis L. Benson, Punxsutawney; Alex. C. Whitehill, Brookville.

Lehigh: *New Members*—Charles R. Fox, 1016 Main St., Northampton; Harold E. Hersh, 36 N. Eighth St.; Ralph F. Merkle, 219 N. Seventh St.; Edwin S. Gault, Sacred Heart Hospital; Martin W. Brossman, 963 Tilghman St., Allentown.

Luzerne: *New Members*—H. Irvin Evans, Daniel F. Frederick, Ashley; Thomas H. Mays, Freeland; David R. Morgan, Edwardsville; Edward I. Wolfe, Shickshinny; Edwin C. Bahnmiller, 122 Kidder St.; Robert N. Clark, 326 So. Main St., Wilkes-Barre. *Removal*—Benjamin W. Genung from Wilkes-Barre to James Creek (Hunt. Co.). *Death*—Daniel W. Dodson (Jeff. Med. Coll. '88), of Nanticoke, recently, aged 70.

Lycoming: *New Members*—D. M. Roudabush, 325 Elmira St.; LaRue Myers Hoffman, 430 Pine St.; John W. Mann, 416 Pine St., Williamsport.

McKean: *Death*—Mary J. Hays (Univ. of Buffalo '97), of Kane, December 29, aged 60.

Monroe: *Death*—John C. Henry (Jeff. Med. Coll. '85), of E. Stroudsburg, December 21, aged 65.

Montgomery: *Resignations*—Walter L. Anders, Tulsa, Okla.; J. Warren Bauman, Lansdale; Henry F. Smyth, Wayne (Del. Co.).

Northampton: *Reinstated Member*—Stanley A. Krebs, 1817 Ferry St., Easton.

Northumberland: *New Member*—Isadore E. Smigelsky, 20 E. Fifth St., Mt. Carmel. *Reinstated Member*—John J. Donahue, 32 So. Market St., Shamokin.

Philadelphia: *Resignation*—Henry D. Beyea, Roane, Gloucester Co., Va. *Deaths*—Anna M. McAllister (Woman's Med. Coll., Phila., '73), of Philadelphia, recently, aged 73; Ella B. Everett (Woman's Med. Coll., Phila., '91), of Philadelphia, January 24, aged 56; Samuel C. Falls (Med. Chir. Coll. '93), of Philadelphia, December 20, aged 50; George E. Shoemaker (Univ. of Penna. '82), January 5. *Removals*—William Ruoff from Philadelphia to 610 Penna. Ave., San Diego, Cal.; A. P. Francine from Philadelphia to State Dept. of Health, Harrisburg.

Susquehanna: *Removals*—T. Oliver Williams, of Brooklyn, Pa., to Tunkhannock; George W. Newman, of Birchardville, to Philadelphia.

Venango: *Reinstated Members*—Mayo Robb, Seneca; John K. Crawford, Cooperstown.

Wyoming: *Resignation*—Thomas M. Baird, 23 W. 43d St., New York.

York: *Removal*—Robert C. Rasin from York to 138 So. 46th St., Philadelphia.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since January 15. Figures in first column indicate county society numbers; second column, State Society numbers:

1920					
		Cambria	129	7201	$5.00
1921					
Feb.	2	Jefferson	50	7343	$5.00
	10	Northumberland	62	7344	5 00
	13	Cambria	128	7345	5.00
1922					
Jan.	16	Beaver	3–15	489–501	65.00
		Venango	2–4	502–504	15.00
		Cumberland	1–14	505–518	70.00
	17	Juniata	4	519	5.00
		Berks	2–41	520–559	200.00
		Columbia	10–21	560–571	60.00
		Lycoming	1–40	572–611	200.00
	18	Mercer	14	612	5.00
		Montgomery	64–78	613–627	75.00
		Potter	6	628	5.00
		Venango	5–15	629–639	55.00
	19	Mercer	15–24	640–649	50.00
		Northampton	46–51	560–655	30.00
		Wayne	8	656	5.00
		Lehigh	1–33	657–689	165.00
		Erie	1–27, 29, 30	690–718	145.00
		Clarion	18–21	719–722	20.00
	20	Mercer	25–30	723–728	30.00
		Delaware	1–42	729–770	210.00
		Somerset	11–19	771–779	45.00
		Venango	16–17	780–781	10.00
		Clearfield	1–20	782–801	100.00
	21	Somerset	20	802	5.00
		Northumberland	9–26	803–820	90.00
		Mercer	31–33	821–823	15.00
		Cambria	1–27	824–850	135.00
	23	Dauphin	16–43	851–878	140.00
		Mercer	34–35	879–880	10.00
	24	Mercer	36–37	881–882	10.00
		Juniata	5	883	5.00
		Northampton	52–68	884–900	85.00
		Armstrong	23–27	901–905	25.00
		Clinton	1–4	906–909	20.00
		Montour	1–13	910–922	65.00
	25	Wyoming	7	923	5.00
		Mercer	38–41	924–027	20.00
		Montgomery	79–92	928–041	70.00
		Sullivan	1–7	942–948	35.00
		Venango	18	949	5.00
		Union	1–2	950–951	10.00
	27	Venango	19	952	5.00
		Allegheny	112–192, 194–273, 275–380	953–1219	1,335.00
	28	Blair	1–33	1220–1252	165.00
		Wyoming	8	1253	5.00
		Venango	20	1254	5.00
		Mercer	42–43	1255–1256	10.00
		Clinton	5–10	1257–1262	30.00
		Potter	7–8	1263–1264	10.00
	30	Franklin	10–13	1265–1268	20.00
		Dauphin	44–62	1269–1287	95.00
		Greene	1–27	1288–1314	135.00
	31	Butler	11–13	1315–1317	15.00
Feb.	1	Wyoming	9	1318	5.00
		Venango	21	1319	5.00
		Wayne	9–13	1320–1324	25.00
		Jefferson	1–25	1325–1349	125.00
		McKean	1–14	1350–1363	70.00
	2	Center	1–10	1364–1373	50.00
		Dauphin	63–76	1374–1387	70.00
		Somerset	21–23	1388–1390	15.00
		Mercer	44	1391	5.00
	3	Venango	22	1392	5.00
		Clinton	11, 13, 14	1393–1395	15.00
		Huntingdon	1–13, 15–19	1396–1413	90.00
	4	Mifflin	12–16	1414–1418	25.00
		Union	3–11	1419–1427	45.00
		Juniata	6	1428	5.00
	6	Union	12–13	1429–1430	10.00
		Potter	10	1431	5.00
		Union	14	1432	5.00
		Clarion	22–23	1433–1434	10.00
		Greene	28	1435	5.00
		Dauphin	77–81	1436–1440	25.00
		Susquehanna	1–10	1441–1450	50.00
		Montgomery	93–106	1451–1464	70.00
		Luzerne	1–43, 45–69	1465–1532	340.00
	8	Mercer	45–48	1533–1536	20.00
		Montour	14	1537	5.00
		Cambria	28–35	1538–1545	40.00
		Crawford	1–15	1546–1560	75.00
		Fayette	1–41	1561–1601	205.00
	9	Dauphin	82–88	1602–1608	35.00
		Blair	34–38	1609–1613	25.00
		Somerset	24	1614	5.00
		Berks	42–81	1615–1654	200.00
		Allegheny	193, 381–584	1655–1859	1,025.00
	10	Clinton	15–16	1860–1861	10.00
		Northumberland	27–46	1862–1881	100.00
	11	Delaware	43–62	1882–1901	100.00
		Venango	23	1902	5.00
		Elk	14–15	1903–1904	10.00
	13	Columbia	22–28	1905–1911	35.00
		Mercer	49–54	1912–1917	30.00
		Cambria	36–53	1918–1935	90.00
	14	Westmoreland	40–73	1936–1969	170.00
		Mercer	55–56	1970–1971	10.00
		Bedford	1–2	1972–1973	10.00
		Montour	15–17	1974–1976	15.00
		Lycoming	41–69	1977–2005	145.00
	15	Somerset	25	2006	5.00
		Snyder	1–3	2007–2009	15.00
		Mercer	57	2010	5.00
	16	Columbia	29	2011	5.00
		Butler	14–24	2012–2022	55.00
		Wayne	14–18	2023–2027	25.00
		Lehigh	34–75	2028–2069	210.00
		McKean	15	2070	5.00
		Mercer	58–59	2071–2072	10.00
		Bradford	21–31	2073–2083	55.00
		Northampton	69–82	2084–2097	70.00
	17	Bedford	3–6	2098–2101	20.00
		Bucks	36–52	2102–2118	85.00
		Mercer	60	2119	5.00
		Adams	1–21	2120–2140	105.00
		Allegheny	274, 585–664	2141–2221	405.00
		Armstrong	28–35	2222–2229	40.00
	18	Delaware	63–68	2230–2235	30.00
		Cumberland	15–16	2236–2237	10.00
		Carbon	1–19	2238–2256	95.00
		Bedford	7–8	2257–2258	10.00

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntington—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Safer, M.D., Wilkes-Barre.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford,
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—John J. Repp, M.D., Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

March, 1922

COUNTY SOCIETY REPORTS

CHESTER—JANUARY

The regular monthly meeting of the Chester County Medical Society was held at the Chester County Hospital on Tuesday, January 17, 1922, with Vice-President W. Wellington Woodward in the chair in the absence of President Willis Smith.

The secretary read several important communications, among them being an invitation from the Delaware County Society to hold a joint meeting of the Delaware, Montgomery and Chester County Societies early in the summer. This invitation was received most favorably by the society and a committee was appointed to make the necessary arrangements. The secretary also read a most interesting report of the past year on the activities of the society, including a statistical report of the attendance of the members in which it was shown that only three members had attended all of the meetings, and sixteen per cent of the members had attended no meetings whatever during the year. He urged that an effort be made to stimulate not only greater membership in the society, but also better attendance at the meetings.

The censors reported favorably upon the application for membership of Drs. Thomas A. Monahan, Ira C. Pratt, John Pratt of Coatesville, Dr. M. W. Mercer of Downingtown, and Dr. Charles A. Palmer of West Chester. As these gentlemen had been well known to members of the society it was moved, seconded and carried that the by-laws of the society requiring the holding over of prospective members for a second reading be temporarily suspended and the secretary be instructed to cast a unanimous ballot electing them to full membership.

Dr. William T. Sharpless read a most impressive memorial to our late fellow member, Dr. Ellwood Patrick, which was unanimously accepted by the society with the recommendation that it be spread upon the minutes of the society and a copy be sent to the bereaved family.

The annual election of officers for the ensuing year was then held. The nominating committee having announced the ballot, the society instructed the secretary to case a unanimous ballot electing the following: President, Dr. W. W. Betts, of Chadds Ford; first vice president, Dr. Willis N. Smith, of Phœnixville; second vice president, Dr. W. Wellington Woodward, of West Chester; secretary, Dr. Joseph Scattergood, of West Chester; treasurer, Dr. Joseph Scattergood; reporter, Dr. Henry Pleasants, Jr., of West Chester. Upon request of Dr. Betts, the new president, Dr. Woodward, continued to occupy the chair for the remainder of the meeting.

The society was then favored with an extremely instructive paper on the "Treatment of Compound Fractures" by Dr. Jesse K. Patrick, of West Chester. Dr. Patrick called attention to what the experiences of the recent war had taught regarding the treatment of compound fractures. The two main problems that confront the surgeon in such cases are the mechanical treatment of the injured part, and the treatment of the attending infection brought on by contamination of the wound. In the matter of first aid it is necessary to cut away the clothing, paint the surface of the limb around the seat of the injury with iodine, apply traction in the line of the bones, and, if the wound is large, pack the wound with sterile or antiseptic gauze. The patient should receive surgical treatment as soon as possible after the injury to prevent the entrance of bacteria into the deeper tissues. The period of contamination in which the bacteria have not had time to enter the deeper tissues is three hours; that of infection eight to twelve hours; and that of suppuration over twelve hours. For this reason all compound fractures should be operated on if possible within the first three hours. He advocated thorough cleansing with neutral soap, of which the common Ivory Soap was usually the most readily obtainable. Next, the macerated tissues should be removed by débridement, and the wound dressed according to the method of Carrel and Dakin. Immediate suture is occasionally used in the case of small wounds which have been promptly treated, and in which the danger of infection is slight. Late primary suture is done after a wound has been packed, and a culture taken which has proved negative to streptococci on two successive days. The dressing of compound fractures should always be instrumental, and only the strictest aseptic technique should be employed. Dr. Patrick then gave a demonstration of the mechanical appliances used, laying particular emphasis on the Thomas splint and its modifications, the "Ice-tongs" method of traction used in fracture of the lower end of the femur, and various methods of securing traction according to the location of the injury.

At the conclusion of the meeting a light luncheon was served by the superintendent of the Chester County Hospital, Miss Schaffer, to whom a vote of thanks was extended by the society.

Henry Pleasants, Jr., Reporter.

COLUMBIA—DECEMBER-JANUARY

The regular monthly meeting of the Columbia County Medical Society was held at the Hotel Magee, Bloomsburg, on December 8th. After dinner the society was called to order by the president, Dr. C. B. Yost, and the following officers were elected for 1922: Dr. F. R. Clark, Berwick, president; Dr. H. S. Buckingham and Dr. D. B. McHenry, vice presidents; Dr. L. B. Kline, secretary and treasurer.

An excellent paper on "Eclampsia" was read by Dr. F. R. Clark, which was followed by a spirited discussion. Dr. C. B. Yost delivered the address of the retiring president, which was very interesting and highly appreciated by all. The scientific program for the new year was presented by the committee on same, consisting of Drs. Kline, Vastine and Shuman. The program was generally commended and includes during the year the following physicians from neighboring counties: Dr. J. M. Wainwright, of Scranton; Dr. George W. Reese, superintendent of Shamokin State Hospital; Dr. J. C. Biddle, of Fountain Springs Hospital, and Dr. H. M. Becker, of Sunbury.

The first meeting of the society for the new year was held at Catawissa on January 12th. An exceptionally fine dinner was enjoyed at the Catawissa Hotel, after which the members proceeded to the new rooms of the Tyrian Club in the Masonic Temple, where the meeting was held and presided over by our newly elected president, Dr. F. R. Clark, with the following members present: Drs. F. R. Clark, S. B. Arment, W. C. Hensyl, J. R. Montgomery, H. V. Hower, T. C. Harter, J. W. Bruner, H. S. Buckingham, H. Bierman, G. F. Drum, W. P. Hughes, Ruth Tustin, J. T. MacDonald, B. F. Sharpless, J. M. Vastine and L. B. Kline. We were pleased to have with us as a guest of honor, Dr. J. M. Wainwright. Dr. Ruth Tustin, a resident and native of Bloomsburg, but formerly a member of the Washington County Medical Society of Maine, was elected to membership in the society. As the only lady member, she was heartily welcomed and cordially greeted by all.

The scientific program was unique in the history of the society, being the first one where pictures were thrown on a screen. An exceptionally strong and interesting address on the treatment of cancer, with reference to radium, was given by Dr. J. M. Wainwright, chairman of the Commission on Cancer. The doctor stated that radium does not supercede the operative procedure when operation is possible, but if operation is not deemed advisable, radium should be given a trial. Dr. Wainwright illustrated the various phases and types of cancer by pictures thrown on a screen, thus demonstrating the efficiency and curative power of radium in superficial cases. He asserted that radium would not act effectively through more than one and a half inches of tissue. Discussion of the subject was opened by Dr. J. W. Bruner, of Bloomsburg. Many of the members participated in the discussion or plied the speaker with many questions on the subject.

The members generally were delighted with the program. A number of laymen were in attendance at the meeting and enjoyed the discussion by the medical profession.

L. B. Kline, Reporter.

CRAWFORD—JANUARY

The regular meeting of the Crawford County Medical Society was held January 4, 1922, in Spencer Hospital at Meadville. Members present were Drs. Jackson, Werle, Winslow, McFate, Skelton, Mosier, Hyskell, Laffer, Gamble, Hayward and Thomas. A communication from Dr. Henry D. Jump concerning a cancer committee was read, and upon motion the president appointed Drs. Jackson, J. C. Logan and W. E. Hyskell as said committee.

Dr. R. B. Gamble, retiring president, made an address, in which he reviewed the work of the society during the past year. He then became prophetic and looking into the future awhile told those present what he saw. The address was well received and was a fitting close to a satisfactory and successful year in the office of president of the society.

The following officers were elected for the year 1922: President, Dr. W. W. Shaffer; first vice president, Dr. C. M. Hazen; second vice president, Dr. W. H. Cowan; censor for three years, Dr. W. G. Johnston; censor for two years, Dr. H. C. Winslow.

C. C. Laffer, Reporter.

DELAWARE—JANUARY

The January meeting of the Delaware County Medical Society was held at Chester Hospital on the 12th inst., Dr. George H. Cross presiding.

The following were elected as officers for 1922: President, Dr. John B. Roxby, Swarthmore, first vice president, Dr. J. Clinton Starbuck, Media; second vice president, Dr. Stoddard P. Gray, Chester; secretary-treasurer, Dr. Walter E. Egbert, Chester; reporter, Dr. George B. Sickel, Chester; librarian, Dr. C. Beverly Shortlidge, Lima; censor, Dr. Harry C. Donahoo, Chester.

The scientific paper of the evening was presented by Dr. E. J. G. Beardsley, of Philadelphia, on "The Diagnosis of Cardiac Conditions." Dr. Beardsley emphasized, as fundamental to the correct diagnosis of cardiac diseases, the careful taking of the patient's history and the proper exposure of the patient for examination. With a carefully prepared history and the information obtained by inspection and palpation of a properly exposed patient, auscultation becomes of secondary importance. If one sees pulsating veins in the neck and displacement of the apex to the left, particularly in a patient with a history of previous acute rheumatic fever or other similar infection, auricular fibrillation complicating mitral stenosis is at once suspected even before a stethoscope is used. Aortic regurgitation is suggested by pulsating arteries, a Corrigan pulse and displaced apical impulse, especially with a history of syphilis. The position of the apical impulse as evidence of cardiac enlargement is of great importance, but displacement of the apex beat may be due to extracardial conditions and these must be excluded as causes of the displacement.

Functional cardiac disorders are characterized by absence of cardiac hypertrophy, absence of thrills and murmurs, or merely the presence of a mitral systolic murmur. Patients are frequently placed in bed for long periods of time because of the presence of such murmurs which are simply functional in nature. These functional murmurs and arrhythmias are often due to excessive sexual stimulation, coffee, etc.

The most common organic disorder seen is mitral stenosis, with an accompanying regurgitation in most instances. The presenting symptoms in most of these patients is dyspnea. The physical signs observed are a thrill at the mitral area, cardiac hypertrophy, pulsation of the veins of the neck and an enlarged liver. The thrill is diastolic in time. In many cases no murmur is heard. The physical signs in aortic regurgitation, which is next in importance, are pulsating arteries at the neck, cardiac hypertrophy and a Corrigan pulse. The murmur is of secondary importance. Aortitis may produce a similar murmur, but one doubts the presence of aortitis without damage to the valve leaflets. Blood pressure readings will show an extremely low diastolic reading, with a consequent large pulse pressure.

In view of the fact that valvular heart disease is extremely common and that when it is observed one cannot repair the damaged valves, the prevention of such lesions becomes of paramount importance. The chief factors in the cause of mitral disease, and in aortic stenosis, are tonsillitis, acute rheumatic fever, chorea, scarlet fever and influenza. The offending organism in most of these conditions, if not in all, is the streptococcus. Therefore the only means at our disposal in preventing these valve lesions is the proper care of these diseases or their prevention. Rest in bed until complete recovery is effected, even in cases of tonsillitis, will do much, and the prevention of subsequent attacks, by the removal of foci of infection, will aid materially in preventing endocarditis. Aortic regurgitation is intimately associated with syphilis, and the prompt, early and thorough treatment of this latter infection is the important preventive measure.

Dr. Beardsley's paper was very interesting and practical, and was thoroughly enjoyed by each of the thirty-two members present.

George B. Sickel, M.D., Reporter.

FRANKLIN—JANUARY

The ninety-seventh annual and stated monthly meeting of the society was convened in the parlors of Hotel Washington, Chambersburg, at 5:30 p. m., and was presided over by the vice president, John W. Croft, of Waynesboro. Nineteen members were present besides these guests: Dr. Tom A. Williams, Washington, D. C.; Dr. Harvey F. Smith, Harrisburg, and Dr. Alexander Stewart, Shippensburg.

The secretary and treasurer each made their annual report, and the following officers were elected for 1922: President, H. M. Miley, Chambersburg; vice presidents, Drs. L. H. Seaton and A. W. Thrush, Chambersburg; secretary, John J. Coffman, Scotland; assistant secretary, Samuel D. Shull, Chambersburg; censor 1922 to 1924, P. D. Hoover, Waynesboro; committee on Public Policy and Legislation, Theo. Peters, A. W. Thrush, Chambersburg, and J. B. Amberson, Waynesboro.

President-elect Dr. H. M. Miley was escorted to the chair and presided the remainder of the evening. The legal right to attend labor cases by the osteopaths was inquired into. Dr. Amberson discussed the legal status of vaccination against smallpox regarding the case when it is necessary to repeat the inoculation. Dr. Harvey Smith, Harrisburg, read a paper and discussed toxic and nontoxic goiter. He discussed goiters under three heads: colloid, adenoma and exophthalmic. The conditions were well described and plainly presented, as was the treatment of each variety. Dr. Tom A. Williams, Washington, D. C., in his interesting style gave the history and symptoms, with treatment of a large number of cases of obnubilated states.

The meeting was much enjoyed by all present.

John J. Coffman, Reporter.

JEFFERSON—JANUARY

The January meeting of the Jefferson County Medical Society was held in Punxsutawney, January 9th. The following officers were elected for the present year: President, I. R. Mohney, Brookville; first vice president, A. J. Simpson, Summerville; second vice president, J. C. Borland, Falls Creek; secretary-treasurer, N. C. Mills, Eleanor; censor, J. H. Murray, Punxsutawney; reporter and editor of the *Monthly Bulletin*, W. A. Hill, Reynoldsville.

The retiring president, Dr. S. M. Davenport, delivered an address, after which Dr. J. H. Murray read a paper entitled "The Progressive Era in Medicine." In his paper Dr. Murray deplored the lack of actual material for study in our meetings and in the discussion that followed it was decided to try the clinic plan for this year. A comprehensive schedule has been arranged at the Punxsutawney and Adrian Hospitals for February 9th, and, due to the fact that the annual banquet will be held the same evening, a large attendance is expected.

W. A. Hill, Reporter.

LYCOMING—ANNUAL MEETING

The seventy-third annual meeting of the Lycoming County Medical Society was held at the Park Hotel, Williamsport, on Friday, January 13, 1922. The meeting was called to order by President R. K. Rewalt at 1:50 p. m. Sixty members were present and the following visitors: Drs. P. E. Deckard, Herman Flock, W. H. Rote and F. E. Weddigen, of Williamsport; Dr. Donald Guthrie, Sayre; Dr. Lawrence Litchfield, president-elect of the Medical Society of the State of Pennsylvania, Pittsburgh; Dr. D. W. Thomas, Lock Haven, and Dr. William Gunn, Ontario, Canada.

The Board of Directors rendered a report, but made no recommendations. The Board of Censors reported favorably on the following applications for membership: Dr. Larue Meyers Hoffman, a graduate of the University of Pennsylvania, class of 1919; Dr. D. M. Roudabush, a graduate of Hahnemann Medical College, class of 1906; Dr. J. W. Mann, a graduate of the University of Pennsylvania, class of 1917. These applicants were all unanimously elected to membership. Dr. Joseph M. Corson, of Hughesville, presented his transfer card from the Clinton County Society, which was unanimously accepted.

Secretary Brenholtz presented his annual report as follows: "The average attendance of the regular meetings each month was the largest in the history of the society. The society now numbers 107 members, an increase of three over last year. There were two losses: one by the death of Dr. Victor P. Chaapel on October 16, 1921, and one by transfer of Dr. Henry S. Weigle to the Philadelphia County Society. The accessions were: one by transfer of Dr. Charles E. Allision from the Northumberland County Society, and four by application to membership, as follows: Dr. Barton Brown, Dr. L. M. Knauber, Dr. James H. Burrows and Dr. J. C. Reed.

"The scientific program of the year was an unusually excellent one. Visitors who addressed the society during the year were Drs. Horatio C. Wood, Henry D. Jump, David R. Bowen and George F. Muller, of Philadelphia; Drs. H. L. Foss, Robert Keilty, H. V. Pike and J. Allen Jackson, of Danville, and Dr. Herman Flock and John J. Zeigler, Esq., of Williamsport. Members of the society who presented papers were as follows: John P. Harley, P. H. Decker, W. N. Shuman, W. F. Kunkle, C. M. Adams, F. E. Weddigen, H. M. Ritter, John B. Nutt, W. E. Glosser, A. F. Hardt, L. E. Wurster, George P. Klump, Charles A. Lehman, R. K. Rewalt and George L. Schneider.

"The business management of the society being left in the hands of the officers, the time of the regular meetings is saved for scientific discussion. One of the activities of the society was an action to erect a tablet in honor of its members who were in the service during the World War and their names to be inscribed thereon. At the November meeting steps were taken toward the consideration of securing a permanent home for the society."

The following officers nominated at the December meeting were elected for the ensuing year: President, John A. Campbell; first vice president, J. Louis Mansuy; second vice president, T. Kenneth Wood; secretary, W. S. Brenholtz; treasurer, Charles J. Cummings; reporter-librarian, W. F. Kunkle; censor, Horace G. McCormick; trustees, William E. Delaney and Charles A. Lehman.

Dr. Donald Guthrie, of Sayre, one of the trustees of the State Society, delivered an address on the "Surgical Treatment of the Precancerous Lesions." The paper was discussed by Drs. Hardt, Lehman, A. P. Hull, Hayes and Adams, of Watsontown, and concluded by Dr. Guthrie. Dr. Lawrence Litchfield, of Pittsburgh, president-elect of the State Society, addressed the society on the subject "The Patient Himself." Both addresses were interesting and practical and the society feels it was fortunate in securing these specialists for this meeting. Dr. Robert K. Rewalt, the retiring president, made some very pointed and timely remarks to the members of the society. He called attention to the fee bill and said that there are some members, who have been reported as not living up to its requirements and spirit, and urged the members to adhere to the fee bill, which is only just and reasonable. He also called attention to the importance of organization in the medical profession, stating it is up to the members to do their duty to the local society and profession as a whole. He thanked the members for the assistance they had given him during his term of office and asked the same for his successor.

Dr. John A. Campbell, president-elect, was then conducted to the chair. He thanked the members for the honor of electing him president of the society and asked for the undivided support of every member in helping to make the meetings successful and profitable during the year 1922. The president appointed the following standing committees: Program Committee—George T. Ritter, J. P. Harley and Clarence E. Shaw; Committee on Public Policy and Legislation—J. Gibson Logue, chairman, J. Frank Gordner, George C. Davis, H. F. Baker, L. M. Goodman, J. E. Schaeffer and Raymond J. Bower.

The Committee on Public Policy and Legislation took active part in assisting the Medical Legislative Conference during the meeting of the legislature. Ninety-eight members paid the assessment of $3.00 to help defray the expenses of the conference. Under the auspices of the society, a Public Health meeting was held at the Community House on November 15th. At the request of the Chief of Police of Williamsport nearly all of the physicians have secured the official "Caduceus" to be placed on the radiators of their automobiles.

The best and most successful accomplishment of the year was the publication of the *Medical Bulletin*. This venture proved a success in every way, and the credit for this success was due to the good work of Secretary Brenholtz. The members expressed their appreciation of this service by making up a purse of one hundred dollars and presenting it to Dr. Brenholtz at the time of the banquet. The banquet was held in the evening and sixty plates were laid. Dr. Charles J. Cummings acted as toastmaster. The visitors who responded to toasts were Dr. Lawrence Litchfield, president-elect of the State Society; Dr. Harry W. Alberton, of Scranton, a trustee of the State Society, and Dr. William Gunn, of Canada.

W. F. Kunkle, Reporter.

MERCER—FEBRUARY

The members and guests of the Mercer County Medical Society were entertained at Buhl Hospital, Sharon, on Thursday, February 9, 1922.

At 10 a.m. surgical clinics were held by the president, Dr. A. M. O'Brien, Dr. C. C. Marshall and Dr. John F. Spearman, all of Sharon; also a medical clinic by Dr. E. N. Hague of Sharon.

At one o'clock forty-five assembled in the Recreation room in the Kimberly Memorial Home for Nurses, where a delicious luncheon was served by Miss Margaret Cummig, superintendent of the Hospital. The tables were prettily decorated with jonquils and maidenhair ferns. A business meeting followed. Reports of secretary and treasurer were read for the year 1921 and officers were elected for 1922, this meeting taking the place of our regular meeting in January, which was postponed owing to a banquet. The year 1921 under the presidency of Dr. A. M. O'Brien, was one of the most successful years in the history of our society. Many important things were accomplished. Election of officers resulted in the following: President, Joseph H. Reed, Sharon; first vice president, John E. Ferringer, Stoneboro; second vice president, F. C. Potter, Mercer Sanitarium; secretary-reporter, Edith MacBride, Sharon; treasurer, Carl J. Mehler, Sharon; censor, B. E. Mossman, Greenville; Committee on Public Policy and Legislation—Frank M. Bleakney, Grove City; John E. Ferringer, Stoneboro, and C. W. McElhaney, Greenville.

We were especially honored to have as our guests three officers of the State Society: Dr. Lawrence Litchfield, President-elect, of Pittsburgh; Dr. Frederick L. Van Sickle, of Harrisburg, Executive Secretary, and Dr. H. W. Mitchell, Trustee and our District Councilor, of Warren. Dr. Litchfield made an excellent address and told us the things they have done in the Allegheny County Medical Society. Dr. Van Sickle spoke on the "Future of Medicine" and left some fine thoughts with us. We have had Dr. Van Sickle with us before and enjoy his presence very much. Dr. Mitchell gave us some excellent advice in his talk. Dr. O'Brien made some well-chosen remarks and asked all members to pledge their support to our state officers' wishes.

A rising vote of thanks was given Drs. Litchfield, Van Sickle and Mitchell, and to Miss Cummig for the entertainment and hospitality at Buhl Hospital.

Adjourned to meet at the court house in Mercer on Thursday, March 9, 1922.

Edith MacBride, Secretary-Reporter.

MONTOUR—JANUARY

The regular monthly meeting of the society was held at the State Hospital for the Insane, Danville, January 20th, and was called to order by the president, Dr. R. A. Keilty, at 8 p. m., and it proved to be an interesting and enjoyable occasion. It was, in a sense, the annual meeting, since beside such routine business as the reading and approval of minutes, reports of committees, etc., there were reports of the secretary and treasurer and the election of officers.

The secretary reports a membership, at the beginning of 1921, of 19; admitted during the year 5; suspended 1; present membership 23; a net gain for the year of 4. Eleven meetings were held during the year with an average attendance of ten members. Moneys were received during the year to the amount of $204.50, which was paid over to the proper custodians.

The election of officers resulted as follows: President, Dr. H. V. Pike; first vice president, Dr. J. Allen Jackson; second vice president, Dr. E. H. Adams; secretary and reporter, Dr. J. H. Sandel; treasurer, Dr. G. B. M. Free; censors, Dr. R. S. Patten (1 year); Dr. H. L. Foss (2 years), and Dr. E. T. Williams (3 years).

Dr. R. A. Keilty delivered his address, as retiring president, taking as a subject, "Medical Progress and Its Dependence Upon Pathology." He first spoke of the work of the society, as a whole, during the past year, and in many respects it was regarded as the best in its history.

The society enjoyed, at its meetings, the presence of some prominent men; notably Prof. J. C. Bloodgood of Johns Hopkins University, Baltimore; Dr. Henry D. Jump, President of the State Society, and Dr. J. M. Wainwright, of Scranton. He also called attention to some important papers which were presented during the year, those on mental diseases by members of the staff of the State Hospital, the paper on middle ear diseases by Dr. Nebinger, and the paper on Types of Oral Infections by A. B. Vastine, D.D.S. (by invitation), standing out as especially good. He commended his fellow officers and the members for the cordial and efficient coöperation he had enjoyed in the work of the society, and which contributed so much to the success of the meetings.

Coming to his subject proper he told how the progress of medicine in the past, as well as in the future, depended upon pathology and the work of the laboratory; indeed without these little or no real progress can be made. He stated that many laboratories have arisen, some of them well manned, others indifferently. Most laboratories are fulfilling a legitimate function, although some are commercialized. The writer stressed the fact that there are to-day still too many physicians in practice who do not make use of the laboratory. He closed by emphasizing the thought that pathology and the work of the laboratory will in the future be the bulwark of medicine. The paper was warmly received and by vote of the society it was directed that it be forwarded to the State Journal to be published in full.

Several of the members present indulged in reminiscences of their college days and rejoiced that it had been their good fortunes to have as teachers, men who stood out as leading figures in their day. Dr. Newbaker, who graduated in 1869, mentioned as his teachers, Professors Samuel Gross, William Gross, Joseph Pancost, Wrent and Wallace. He noted the many changes which had taken place in practice since those days, indeed with each generation. It was his feeling that there would be a dearth of physicians in the future, especially for work in the country districts. Dr. Patten joined him in this view and mentioned small towns and villages, which formerly had two and three physicians each and now had but one, or in some cases were without any.

Dues for the present year were received from thirteen members. No further business appearing, the society adjourned. J. H. Sandel, Reporter.

NORTHAMPTON—JANUARY

Northampton held her annual meeting on Friday at 11 a. m., January 20, 1922, at Seip's Café, Easton, with a very heavy attendance.

Dr. Herbert Schmoyer, Bethlehem, read interesting statistical data from the State Department of Health on the maintenance of a county tubercular hospial. A "Ways and Means" Committee was appointed to work up the feasibility. Dr. Victor Messinger, Easton, also spoke at length on the same subject.

The nominating committee brought in the following program for the 1922 offices, which was unanimously accepted, to wit: President, Dr. D. K. Santee, Bethlehem; first vice president, Dr. Paul Correll, Easton; second vice president, Dr. H. C. Pohl, Nazareth; secretary and treasurer, Dr. Victor Messinger, Easton; corresponding secretary, Dr. Gilbert Tillman, Easton; reporter, Dr. William A. Finady, Bethlehem; censors —Dr. John C. Keller, Wind Gap; Dr. William Pomp Walker, Bethlehem; Dr. C. E. Royce, Bethlehem.

Following is the annual message delivered by our retiring president, Dr. W. M. Phillips, Chapmans Quarries, Pa:

OBLIGATIONS OF THE COUNTY MEDICAL SOCIETY

The constitution of your society requires your president to deliver an address at the January meeting, closing his administration.

There are, it seems to me, two important obligations resting upon a county medical society: first, education; second, organization.

The first heading and the most important one, is that of education. The county medical society should provide its members with medical information of the freshest and most useful kind. For this purpose we have an executive committee which has, during the year, been very fortunate in its selection of topics and of speakers, so that the attendance has been uniformly good. I am sure that I voice your feelings in the matter when I say that the society is very much indebted to the secretary and the one member appointed by your president which constituted the active and working part of the executive committee, for their untiring efforts in arranging the interesting programs which they have provided for us during the year.

One of the great teachers was asked why he prepared each lesson every day. He replied, "I prefer having my pupils drink from a bubbling spring rather than from a stagnant pool." So the up-to-date, wide-awake and progressive practicing physician will study each individual patient and with his mind stored with the latest, best, freshest knowledge, give his patient the best service at his command. We have to be students, attend medical meetings, read medical journals, medical books and take postgraduate work in the branches in which we are lacking and in the subjects in which we wish to specialize.

A young clerk in Wanamaker's store was selling buttons and complained to a friend that his salary was so meagre he could scarcely make ends meet. His friend asked him, "What do you know about buttons?" He replied, "Nothing." His friend said to him, "You study buttons—find out all there is to be known about buttons." He took the hint. He studied all about buttons until he knew more about buttons than anyone else in the store. In a short time he was promoted to the head of that department, and is now the buyer of buttons for that great store.

A fellow member of our county society told me about a year ago that during the month of August, 1920 (which is an off month, his income from his practice amounted to $1,135.00. He did not tell me what he earns during his best month. I drew my own inference. He has made special preparation for his work. He does not do any fifty cent office work, either. He practices in one of the small boroughs of our county. Some of his co-workers in our cities might have reasons to envy him.

Someone has well said that "true service for one's self must begin with service for others." The man who lives for himself alone becomes narrow and selfish and eventually ceases to grow. But the man who thinks of others is constantly developing and thus fulfils his destiny in the greatest possible way.

A leading surgeon in one of our larger cities told me recently that he must attend a medical meeting or clinic about once a week in order to keep himself from getting a swelled head. Greater than average success does not come to the man who shuts himself within himself. It comes to the man who can make profitable use of other men and their experience. We become physicians by profiting by what countless others have learned and by studying the experience of others. There has been so much progress in medicine in the last ten years that the physician who has not been attending medical meetings, reading current medical literature, or has not taken up postgraduate work, has well nigh become a hermit or a Rip Van Winkle.

In the matter of education, it seems to me we have not lived up to our highest usefulness. Subjects which concern the public as much as ourselves have not been brought to the attention of the public. The physician should be the guide and the counsellor of the public in all matters of health, sanitation, and preventive medicine. Properly censored articles concerning the medical profession and the public might be published in the lay press. Parent-teacher meetings and other assemblies of a similar kind would afford good opportunities to discuss some related subjects. I think the public is reading much literature and many advertisements in the lay press, so-called medical almanacs, and pamphlets and medicine shows. We had some of these shows last summer, traveling from one end of the county to the other.

The medical reporter of the county society can do a great deal in reporting the meetings of the society and in giving more publicity to the various subjects under discussion. If necessary he should have a stenographer, so that he can give fuller account of the papers that are discussed from time to time. It would encourage the speakers who come here if they knew that their papers were fully reported in the medical journals and in the lay press.

There are many subjects that could be discussed and introduced into our public schools. The public can be reached more quickly through the medium of their children, than possibly any other way. When the city of Reading was wasting so much water by the carelessness of some of its people by leaking pipes and running spigots, spending hundreds of dollars in printing articles in the papers and printing and distributing circulars, bringing no relief, they began to teach this subject to the children and in a few days there was a noticeable improvement.

Self-medication: One of the greatest evils confronting American public health is the evil of self-medication. We all have patients come to us with the story that "I have been ill for two weeks, have taken one dozen bottles of cough syrup (or some other advertised medicine sold in the grocery store or at the candy shop) and I am no better (or am progressively getting worse)." Many lives have been sacrificed because of this evil. It is almost criminal neglect to have patients suffer in this manner. When perhaps one visit to a physician would give them relief.

A wise saying has been handed down to us from former generations that "The physician who takes his own medicine has a fool for a patient." If a physician who is ill has not a mind clear enough to prescribe for himself, how much less competent is a person who knows nothing of disease or medicine? The American Medical Association has a department which it keeps at a great expense, and has able chemists employed, who analyze patent medicines and other secret nostrums for the benefit of the profession and public. Do we make proper use of these analyses? A lesson on this subject could be taught by the teachers in our public schools. Articles could be written and printed in the school textbooks.

Sometimes our Sunday school classes afford an opportunity to introduce some medical lore. Several months ago the Sunday school lesson was on the subject of public health. The teacher of one of our Sunday schools asked me to give them a talk on this subject. We should always be ready to render service when an opportunity like this presents itself.

Organization: The importance of organization in the medical profession has been growing for some years. It is the aim of the Northampton County Medical Society to receive into its membership every legally qualified practitioner who resides in Northampton County. Forty-one years ago last October, the Medical Society of Northampton County met at the Northampton Hotel, at Chapmans. There were present Drs. Abernethy, Berlin, Breinig, Buzzard, Cawley, Engleman, J. C. Engelman, Fox, Green, Gotwald, Kern, McIntire, A. A. Seem, A. Seip, W. H. Seip, and Shock. Dr. Thomas C. Young, of Klecknersville, was elected a member of the society. There were sixteen members present. At present we have a membership of 135. Eight new members have been added during the year. We welcome these men into our society for their good and our good.

It has been well said that the active members of the county medical societies are the backbone of the profession. Each county society is a unit vertebra of the medical profession of the state. Our average attendance of 41 members at each meeting shows the activity of the members. I am prepared to prophesy that by such activity of its members Northampton County needs no Chiropractor to adjust or manipulate this unit vertebra of the state society.

It has been observed by those who are active in our county societies that those who do not attend the medical meetings are more apt to get into difficulties. If they are surrounded by their colleagues they feel those wholesome restraints which keep them in the right paths of conduct and they are encouraged to fit themselves for better medical work.

We need every doctor in order to strengthen the organization so that when any measure bearing upon public health, sanitation and the duties of the doctor comes before the Legislature, we are able to speak with force and conviction to those who represent us or our interests. We are not well enough represented in our halls of legislation; we need a strong organization and efficient leadership so that it is not easy to pass faulty or pernicious legislation.

Professor Allen Johnson, of Yale, recently spoke at the School of Citizenship of the Connecticut League of Women Voters. "Studies of state legislatures," he said, "show that on the average only 15 per cent of our representatives have had a college education, and what is worse, not 50 per cent have enjoyed a full common school education. Farmers constitute one-third of our state legislatures; lawyers, one-fourth; and business men a fifth. Less than half have been in contact with the conditions which must be their chief concern in law-making. Measured by the size of their responsibilities, our legislators do not seem equal to the task." Three hundred and thirty-three members of our national Congress are lawyers, and eight members are doctors. Is it any wonder that faulty and pernicious medical legislation can be passed when our profession is so poorly represented? It seems to me that we ought to try to influence some of our members and urge them to become legislators.

A great many county medical societies publish a medical bulletin. I think our society should fall in line and produce a bulletin. I think it would be helpful to each individual member of our society. Many helpful hints and suggestions would be brought to our attention in each issue. Each member should be encouraged to contribute any material that would be of interest to the society. If the executive committee finds this work too burdensome, an editor might be appointed to assist and arrange the matter for the program committee.

This society has been growing in membership as well as in influence. We ought to have a home that we can call our own. There ought to be a place where records are kept, a place where a medical library could be accessible to each member at any time. When we come to town, we could feel that we have a place where we could go to read, to look up references, and meet socially. One room would be sufficient. This could be arranged so that luncheon could be served in a similar manner as it is served at our hospital meetings.

The Ladies' Auxiliary of the Northampton County Medical Society has organized, or is about to organize to-day. I believe that they will be able to help us in many ways. Some of these societies in other counties have been raising funds to furnish a home for the medical society. They have been active socially and have in this manner widened the influence of the profession. They should be encouraged in their new undertaking.

"The busy world shoves angrily aside
The man who stands with arms akimbo set
Until occasion tells him what to do.
And he who waits to have his task marked out
Shall die and leave his errand unfulfilled."

W. M. Phillips,
January 20, 1922. Chapman Quarries, Pa.

Dr. Paul Walter, Bethlehem, retiring secretary had an interesting annual report. Dr. D. K. Santee, our new president, was conducted to the chair and after a few well chosen words of appreciation, 1922 was on her way. We expect our new president to give the same untiring efforts as his predecessors. The keynote of Northampton is the uplifting of anything that needs correction or improvement in our fields of endeavor.

It was decided that hereafter the meetings would alternate between Easton and Bethlehem, one or two meetings to be held at other points in the county. Luncheon was served, after which the society adjourned to meet at Bethlehem in February.

William A. Finady, Reporter.

PHILADELPHIA—JANUARY

The regular meeting of the Philadelphia County Medical Society convened January 11, 1922, with the president, Dr. George Morris Piersol, in the chair.

The Probable Normal and Pathological Physiology of the Thyroid, by Dr. John Rogers

Dr. Rogers opened his paper by saying that he had thought first of entitling the article "The Surgical Neuroses of the Thyroid." The surgical part of the story implies that the thyroid is an organ which by viciously overacting causes trouble and should be extirpated. Neuroses—abnormalities of function of one or all parts of the central nervous system, for which there are no demonstrable lesions—is also a good word for the subject. Neuroses are due to deficiency, and in studying failures and defects in thyroid activity we find striking analogies to vitamine deficiency. The hyperthyroid neuroses form the chief subject of interest, and as this condition is made worse by feeding thyroid, we hear that the organ should be removed. The symptoms of exophthalmic goitre point to a disturbance in the involuntary part of the central nervous system, or in the vagus group of nerves.

Fifteen years ago Dr. Rogers read a paper here on the Serum Treatment of Hyperthyroidism. A man in his laboratory had, by injecting into rabbits a nucleoprotein extract from the kidneys, destroyed their kidneys. Dr. Rogers suggested a similar experiment for the thyroid and tried it out on three patients. The first was a case of acute toxemic hyperthyroidism of three to four days' duration, which had come on out of a clear sky. Three doses acted like diphtheria antitoxin. The second case was cured in one month on two doses, and the third also recovered. In one case which went violently toxemic he injected a serum of human thyroid, with a quick and as satisfactory a result as that obtained on toxic thyroid serum. The treatment was very severe, however, and he concluded that surgery was safer and more satisfactory.

Tracing a history of these patients he finds that they begin as a primary failure, and later the hyperthyroid condition develops. The nervous person has had too great a strain to resist. Exophthalmos is increased by conditions requiring expenditure of energy—nutritional, mental, nervous or physical, and further back in the past there has been a stage of headache, constipation and anorexia. Goitre and fatigue diagnose hypothyroidism. All these cases begin as hypothyroidism and later with failure of nutrition, become hyperthyroid, passing through a stage where the two conditions (hypo and hyper) are mixed.

At this point in his talk Dr. Rogers drew on the blackboard a diagram of the brain, spinal cord, vagus and sympathetic nervous systems, placing in also the thyroid, bronchi, heart, stomach, pancreas, gut, adrenal and last, but not least important, the uterus and ovary. The involuntary nervous system supplies every organ except the brain, and this is of interest because it bears on both the medical and surgical sides. After noting the course of the disease, hyperthyroidism, and observing that the serum made some better, but the majority worse, he tested in the laboratory all possible thyroid extracts on animals. With the non-coagulable derivatives (alcoholic extract or a hydrolized aqueous extract, "thyroid residue") he made the following observations on dogs which he had injected: (1) Vasodilation. (2) Pulse unaffected; in some instances slowed. (3) In Pawlow stomach, gastric flow was increased five to twentyfold in five minutes. (4) Flow of hydrochloric acid stimulated. (5) Pancreatic secretion increased tenfold. (6) Gastric and intestinal peristalsis stimulated. (7) Contraction of longitudinal muscle and uterine muscle stimulated. He found also that when the vagus was cut above the diaphragm or after injection of atropine, that is, in conditions where the end plates of the vagus had been destroyed, there was no result after an injection of thyroid.

In like manner, as the thyroid acts so strongly on the vagus, so the adrenal responds to the sympathetic, and in experiments with nucleoprotein and adrenal residue extracts of these glands he found that there was a checking of gastric and pancreatic secretions and a constriction of the circular fibres of the intestine. Adrenalin differs from the extract of the whole gland in that it has no effect on stomach or pancreas. As adrenal extract produced inhibition of the whole gastro-intestinal tract it was tried on the thyroid. Alcoholic extract of the whole adrenal fed to dogs proved violently toxic (thyroid can be given with impunity) and when fed this extract by mouth there was no increase in thyroid iodine. When given adrenal nucleoprotein, however, there was a 50 per cent gain in iodine in three weeks, while with the hydrolized aqueous extract the gain was 75 to 150 per cent. Analogous with its action upon the stomach and pancreas, adrenal inhibits the thyroid through the sympathetic nerve supply.

From both experiments and clinical observation it may be stated that all thyroid conditions are due to overaction of the ends of the vagus system, as seen for example, in the overaction of the gastro-intestinal tract and the flushing of the skin (vasodilatation). It is therefore reasonable to say that the thyroid acts through the vagus, the adrenal through the sympathetic. From electrical and chemical tests the general functions of the two systems seem to be contrasting, the vagus system *drives*, the sympathetic system *inhibits*. Apparently the thyroid acts by stimulation of the vagus and so participates in the drive; the sympathetic and adrenal check. There is no clinical evidence to inform us about hypo- and hyperadrenalism, but for hypo- and hyperthyroidism the evidence is plain. In the symptomatology of thyroid disorders it is well to think of *drive:* if there is drive, plus swelling, hyperthyroidism; if no enlargement, fatigue disorders and *lack of drive*, myxedema.

There are mixed cases, between hypo- and hyperthyroidism and with these comes the question of operative or medical treatment. This is determined by summing up the amount of drive and lack of drive. If the drive is excessive, e. g., if they are too hungry, if the bowels move too much, the condition is hyperthyroid.

We come next to treatment, and we take up the surgical treatment first. Clinically there are three points to be considered: (1) the amount of hyperplasia, (2) the distribution of hyperplasia, (3) the location of hyperplasia. There are three types of cases: first, the typical exophthalmic goitre case, characterized by irregularly shaped alveoli, which may break up to form multiple small alveoli scattered diffusely through the gland; second, a less common type in which one lobe is very much increased, and with hyperplastic alveoli, while the other lobe is normal; third, the toxic adenomata, single or multiple. In the last group the single toxic adenoma begins as a hypothyroid condition. The gland becomes congested, there is sudden hemorrhage, followed by a hyperplastic process, multiplication of alveoli and cyst formation. If the toxic adenomata are cut out and the normal tissue left, the patient quiets down to the normal or hypothyroid condition. In the second group, with one lobe enlarged, excision may bring about a cure, then subsequently the patients pass into the hypothyroid stage, becoming weak, tired, pale, with no appetite and no "go." In the first set it depends on how many toxic alveoli are left whether they get well or not. These cases are much more hazardous to operate on than the other two types. In such cases Dr. Rogers ligates all four thyroid arteries in two stages, and out of a series of 1,500 cases he has a mortality of 2 per cent. The sum total of his results shows 85 per cent cures. They are always treated medicinally after operation. His theory in this procedure lies in the fact that as the impulses forcing overaction come through the blood or nerves or both, and as the chief influence is through the blood, the cutting off of the blood supply quiets down the activity of the gland, and this with medicinal treatment, effects a cure. He urges this method in view of the probable development of hyperthyroidism from the hypothyroid condition, and also because there is no way of determining how much can be removed surgically without losing drive.

As to surgical technic, ligation of the superior thyroids causes pain for two to three days after the operation, while ligation of the inferior thyroids is more humane. This latter is done by section below the sternocleidomastoid muscle, under the scalenus anticus, just as the artery leaves the thyroid axis. There is practically no pain and the reaction is less than in ligation of the superior thyroids.

The medical treatment is extremely important. Every surgeon should see that medical treatment is carried out after operation. After operation he has found it best to feed the nucleoprotein derivative or thyroid residue to prevent reversion to the hypothyroid state. If too much drive persists, that is, if the patient is sweaty, with too much gastro-intestinal or vasomotor drive, he feeds adrenal extract to check the gastro-intestinal disturbance and also to help the thyroid hold iodine.

In postoperative acute exacerbations, for instance, when immediately after operation the patient "goes out" with a rapid pulse and high temperature, he has saved some by a blood extract of the thyroid. This is made by extracting for a week, pouring the extract into boiling water, filtering, and sterilizing. This is used hypodermatically.

In closing, as a suggestion as to the physiology of what happens in these cases, Dr. Rogers stated that it was due to a disturbance of chemistry more complex than too much thyroid secretion, they die of failure of the "drive and check" system.

Surgery of Toxic Goitre, by Dr. C. F. Nassau

Dr. Nassau said that he had repeatedly noted after removal of simple goitre, especially when it was of large size, a disproportionate improvement in health. This improvement sometimes pertained to the central nervous system, sometimes to the heart, and was due to loss of thyroid activity.

He mentioned three groups of cases: first, those showing the characteristic symptoms of hyperthyroidism and exophthalmic goitre; second, those with adenoma and hyperthyroidism, like the first group except for the exophthalmos, but a clinical entity, with increased basal metabolism, tachycardia, emaciation and increased appetite; third, cases with nervous manifestations—tremor, tachycardia, with the thyroid enlarged by increase in colloid, with normal basal metabolism, and which respond to medical treatment. In these last surgical treatment is contraindicated.

The adenomata rarely reach a high degree of toxicity. The degree of toxicity may be judged by the loss of weight (by which can be judged also the severity and length of the attack), by the increased pulse, and by a loss of strength, evidenced in weakness of the extensors and inability to walk. The nervousness he considers not so important an index. The basal metabolic rate is very important in differentiating between hyperthyroidism and a neurosis associated with a large colloid goitre caused by an adenoma which is not producing an increase in the glandular hormone. It does not tell whether or not operation is safe, though the mortality is increased with a high metabolic rate. As a general rule, preliminary ligation is not indicated in a rate below 50, or rarely below 40. In quiescent hyperthyroidism the metabolic rate may be misleading.

Operation for hyperthyroidism is dangerous at the peak of the hyperthyroid wave, and in many cases heretofore the mortality has been due to surgery during the progress of the disease. At such times palliative measures should be resorted to, and while ligation is best, in severe cases it is best to use the milder methods of relief. No surgeon or medical man can cure all cases of hyperthyroidism.

Dr. Nassau next spoke on the value of x-ray therapy. As a whole, he said, the results have not been satisfactory. It is of no value in the colloid or adenomatous forms, but is of great benefit in enlargement of the thyroid, especially in adolescent girls. There are three dangers that he stressed: first, destruction of the gland function, resulting in hypothyroidism; second, formation of connective tissue, making an operation, if indicated subsequently, difficult; third, the risk that a fatal reaction may follow. From a study of one hundred cases given x-ray treatment and a like number of operative cases the results favor operative treatment. However, if the thymus is suspected, the x-ray should be used.

Before operation all possibility of auto-intoxication and focal infection, such as bad tonsils, should be eradicated, and after operation there must be careful regulation of the diet and the amount of rest the patient gets over a period of from three to six months.

The type of operation varies with the patient and with the stage of the disease, varying from ligation of one vessel to partial or complete lobectomy. The purpose of ligation is twofold: first, to test whether patient is a fit surgical risk in doubtful cases; second, to prepare for thyroidectomy. There should be a one-week interval between that operation and the ligation. Operation should never be done if the patient has had a restless night or if there is any gastro-intestinal upset on the way to the operating room, and in extremely nervous cases it may be well not to let them know when the operation is to be done. A thyroidectomy is always advised, as the preliminary treatment is only preparatory and a radical measure alone will cure. There is rarely a recurrence after removal of the gland. In a subtotal thyroidectomy the trachea is cleared of all thyroid tissue and a symmetrical scar is left. In substernal and intrathoracic goitre tracheal obstruction may be met with, and in such cases intratracheal anesthesia is best. In all operations, care of detail (drainage, replacement of muscles, etc.) gains the gratitude of the patient through the resulting invisible scar.

Dr. Henry D. Jump opened the discussion. He said that discussion of any of the ductless glands and the treatment of their ailments opens complexities of thought and leaves us confused because of lack of knowledge of the work previously done on the glands and our failure to understand the intricacies of the work which has been done.

It is hard to appreciate the fact that the primary stage of hyperthyroidism is hypothyroidism, but in support of that theory, held also by McKenzie and Sajous, we have the fact that goitre appears in districts where there is a deficiency of iodine, and these cases improve on removal from that environment. Marine and his colleagues in a study of adolescents in the goiterous districts of this country, especially near the Great Lakes, found that there was a lack of the development of goitre in those cases to whom iodine was given in the period during which the enlargement usually occurred. This bears out the contention of Dr. Rogers that the gland does not have to grow to compensate for that which it does not normally produce. Another evidence is that simple goitre does degenerate into the hyperthyroid type. However, Dr. Jump is convinced that some cases are primarily hyperthyroid. In many cases he has not been able to find any history of hypothyroid symptoms at an earlier stage.

In diagnosis and treatment he thinks it well to bear in mind a causative factor, some possible focal infection, and often in such conditions as diseased tonsils he finds their removal brings satisfactory results. He too would stress the point made by Dr. Nassau, that operative treatment is not the last thing to be done; the postoperative care must be carried on until the patient returns as nearly to normal health as possible.

In considering basal metabolic determination, the subject must be approached with caution, it must be done by an expert. Most of these results so far have been disappointing.

As for the x-ray, he believes it a very successful procedure in a large number of toxic goitres, although it makes the case harder for the surgeon if the patient finally comes to operation.

Dr. John H. Gibbon, in discussion, said that he feels that surgery is not the ideal treatment, and that the thyroid problem is not yet solved. It is important that the general practitioner know the cases wherein operation is advisable, and the adolescent goitre is not among these. He wonders whether or not the effect of ligation is not due to a disturbance of the nervous mechanism of the organ, and believes that the determination of the basal metabolic rate is one of the helpful factors in deciding the operability. He heartily agrees with the speakers who stressed the importance of postoperative care, and feels that the x-ray has a distinct place, just as the ligation operation has.

Further discussion laid stress on the value of both the x-ray and basal metabolism.

In closing, Dr. Rogers stated that he thought that fatigue is at the bottom of nine-tenths of the stories. He also urged the use of local anesthesia in the ligation of the vessels, especially of the inferior thyroids.

Dr. Nassau closed the discussion.

MARY A. HIPPLE, Reporter.

STATE NEWS ITEMS

DEATHS

DR. MARY J. HAYS, Kane, Pa., died December 29th, aged 60.

MRS. MARTHA J. SANKEY died January 31st, at the home of her son, Dr. T. Morton Sankey, of Wilkinsburg.

DR. THOMAS E. CONARD, of Philadelphia, a graduate of the Jefferson Medical College, 1878, died February 13th, aged 74.

MR. SAMUEL E. GILL died at the home of his daughter, Mrs. James I. Johnston, Pittsburgh, on February 15, 1922.

DR. ANNA M. MCALLISTER, Philadelphia, graduate of the Woman's Medical College, class of 1849, died January 17th, aged 73.

MRS. DELLA SNODGRASS ANDERSON, mother of Drs. J. H. W. and R. L. Anderson, died at her home in Pittsburgh, on February 15th.

DR. LEVI OBERHOLTZER, University of Pennsylvania School of Medicine, 1854, died at his home in Phœnixville, Pa., recently, aged 89.

DR. JOSEPH ROBERTS BRYAN, Philadelphia, a graduate of the University of Pennsylvania Medical School, class of 1889, died February 14th, aged 58.

MRS. ELEANOR HORNER MCKELVY, mother of Dr. James P. McKelvy, who is a member of the Board of Directors and Ex-President of the Allegheny County Medical Society, died January 22d, at her home in Wilkinsburg.

DR. J. C. DAVIS, formerly coroner of Cumberland County and long prominent in public works in the county, died at his home in Carlisle, February 9th, aged 73. Dr. Davis was a graduate of Jefferson Medical College, class of 1875. He is survived by Mrs. Davis and their three daughters.

DR. H. C. BARTLESON died at his home in Lansdowne February 1st, after a short illness. Dr. Bartleson was born in Radnor Township, Delaware County. He celebrated his seventy-eighth birthday only a week before his death. He received his early education in the Millersville State Normal School and was graduated from Jefferson Medical College in 1870. He is survived by his widow and two sons, Evans E. and Isaac T. Bartleson.

DR. G. ALVIN HILL, of Philadelphia, died January 23d, aged 70. Dr. Hill, after his graduation from the University of Pennsylvania, located in Williamsport, but subsequently took up the practice of his specialty in Philadelphia, where he was prominent in medical circles for the past 25 years. He is survived by two brothers, J. Clinton and Justin L., and one sister, Miss R. Ada Hill, all of Williamsport.

DR. JOHN L. WESSELS died February 2d, at his home in Pittsburgh, aged 60 years. Dr. Wessels was born in Bremen, Germany, and came to the United States when 15 years of age. Following his graduation from the Philadelphia College of Pharmacy, he became proprietor of a pharmacy at Penn Avenue and Thirteenth Street, graduating from the Medical Department of the University of Pittsburgh in 1888. For the past 25 years he has been the health examiner, for the Pittsburgh district, of the Metropolitan Life Insurance Company. He is survived by two sons, George L. and Arthur H., a daughter, Mrs. A. C. Reif, and five grandchildren.

DR. JAMES P. BLACKBURN died at his home in McKeesport, January 24th. Dr. Blackburn was born near Perryopolis, Fayette County, January 1, 1863. He was graduated from Washington and Jefferson College and later studied medicine at the University of Pennsylvania, locating in McKeesport in 1893. He was a member of his County, State and National medical organizations, was active in both church and lodge work, was the organizer and first president of the McKeesport Academy of Medicine, was active in civic affairs and served as president of the McKeesport Chamber of Commerce. His widow, two daughters, Miss Bernice and Miss Margaret, and a sister, Mrs. J. P. Sloterbeck, of Fayette City, survive him.

DR. ELIZABETH REIFSNYDER died at her home in Liverpool, Pa., February 4th, aged 64 years. Dr. Reifsnyder was one of the early graduates of the Woman's Medical College of Philadelphia, and in 1884 at the age of 24, went to Shanghai as a pioneer in medical missions, under the direction of the Woman's Union Missionary Society, a non-sectarian society. She conducted dispensary work in a small building, until a hospital could be erected. To-day one of the finest hospitals in the Far East, personally designed and directed by Dr. Reifsnyder, stands as a monument to her zeal. It is reported that in this hospital last year 820 in-patients and 56,700 out-patients were treated. Dr. Reifsnyder is survived by one brother and two sisters: L. C. Reifsnyder and Mrs. E. C. Dunkerly, of Liverpool, and Mrs. W. L. Eyerly, of Berwick.

DR. A. J. BARCHFELD, of Pittsburgh, a member of the Allegheny County Medical Society, died January 29th, at Washington, D. C., as a result of the Knickerbocker Theater disaster. Dr. Barchfeld was born May 18, 1863, and was graduated from Jefferson Medical College in 1884. He took an active part in the affairs of the Republican party, was a school director, a member of the Common Council of Pittsburgh and a member of the Republican state committee. He served six terms in Congress as a Representative and was a delegate to the Peace Congress at Brussels in 1905. He was a member of the Commission to the Philippine Islands in 1910 and the Panama Canal Commission in 1912. He leaves his widow, a son, Elmer A.; two stepsons, Edgar W. and Dr. Gilbert B. Myers; a sister, Mrs. Mary Geyer, and six grandchildren.

DR. ELLA B. EVERITT, Philadelphia, was killed in an automobile accident on January 24th, while on her way from the Woman's College Hospital to the Philadelphia General Hospital. Her companions, Dr. Marmetta Vogt, who was an associate of Dr. Everitt, and Dr. Miguela Gemil, who had come from the Philippines to do postgraduate work in Philadelphia, were but slightly injured. Dr. Everitt was born in Danville, in 1868, was graduated from Wilson College in 1888 and from the Woman's Medical College in 1891. She was a valued member of a number of medical organizations and was active in religious and educational work. In 1915 she was offered the presidency of Wilson College, but declined the position, owing to her interest in medicine. She was professor of gynecology in the Woman's Medical College, gynecologist to the Woman's College Hospital and visiting gynecologist to the Philadelphia General Hospital. She is survived by her sister, Miss Sara Everitt, of Philadelphia.

BIRTHS

Dr. and Mrs. O. E. Fox, of Reading, announce the arrival of O. E. Fox, Jr., on January 17th, at St. Joseph's Hospital.

Dr. and Mrs. Edward J. Klopp, of Philadelphia, are receiving congratulations on the birth of a son, Edward J., Jr., who was born February 17, 1922.

Dr. and Mrs. Norman H. Taylor, of Chestnut Hill, Philadelphia, are receiving congratulations on the birth of a daughter, Josephine, February 3, 1922.

ITEMS

Dr. Ruth Englehardt, who has conducted the Lansdale Sanitarium for many years, plans to retire and will reside at Chestnut Hill.

Dr. J. Walter Cathrall, the coroner of Bethlehem, has been elected commander of Foreign War Veterans' Post No. 855, of that city.

The county board of directors of the poor have named Dr. S. D. Shull, of Chambersburg, physician to the county home of Franklin County. Dr. Shull will begin his duties April 1, and will serve for one year.

Dr. George Fetterolf, of Philadelphia, by invitation, delivered the annual address before the New England Otological and Laryngolical Association on "Tuberculosis of the Larynx" at Boston on January 24, 1922.

Dr. William H. Hobbs, who has been assistant superintendent of the Blossburg Hospital, has resigned to become chief of staff at the Binghamton, N. Y., City Hospital. He is succeeded by Dr. H. G. Meeker, of Tioga.

Dr. DeWayne G. Richey, of Pittsburgh, pathologist at Mercy Hospital, and lecturing pathologist at the University of Pittsburgh, has been appointed county pathologist by the Coroner of Allegheny County, Dr. W. J. McGregor.

On February 4th, Dr. H. G. McCormick, of Williamsport, accompanied by his wife and friends, left for a ten weeks' tour of Europe, Asia and Africa. They will visit the Madeira Islands, Constantinople, Egypt, Palestine, Jerusalem, Italy, Spain, France and England.

Sir Thomas Lewis of London, England, the international authority on clinical electrocardiography, will deliver the seventh Mellon lecture before the Society for Experimental Biology of the School of Medicine, University of Pittsburgh, on Monday evening, May 8, 1922. A cordial invitation is extended by the Society to the members of the profession to attend this lecture.

The Medical Alumni of the University of Pittsburgh, recently organized, on the evening of January 26th, gave a subscription dinner at the University Club, Pittsburgh, in honor of Dr. C. J. Vaux, recently appointed Director of Public Health of Pittsburgh. Addresses were made by Chancellor John G. Bowman, former Dean Dr. J. Chris Lange, the present Dean, Dr. R. R. Huggins, and Dr. E. E. Mayer. Alumni participated in the occasion to the number of 120.

GENERAL NEWS ITEMS

The field of journalism has been entered by a new contributor to the sum of medical science by the publication of *The Journal of Metabolic Research*, edited by Frederick M. Allen, M.D. Volume I, No. 1, January, 1922, issue has been received and is indeed a step in the right direction of the publication of medical literature. This journal is to be published monthly by The Physiatric Institute, Morristown, N. J.

The annual report of the National Museum of Washington, D. C., for the year ending June 30, 1921, devotes considerable space to the description of a biological exhibit of the H. K. Mulford Company products, recently installed in the Smithsonian Institute. The exhibit is strictly an educational one, and consists of specimens of vaccines, antitoxins, serums, serobacterins, photographs, colored transparencies and charts.

Members of the Physicians and Surgeons Adjusting Association, of Kansas City, Mo., can hereafter purchase their supplies and equipment through the Association, at money saving prices, according to an announcement of the Association just received. The plan is not new, having been tried successfully by other organizations, notably farmers and druggists. The saving averages thirty per cent, according to the announcement. Those interested should write the Association, address Railway Exchange Building, Kansas City, Mo.

The annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals will be held in the Florentine Room of the Congress Hotel, Chicago, March 6 to 10 inclusive, 1922. This Congress is held under the auspices of the Council on Medical Education and Hospitals and the Council on Health and Public Instruction of the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States and the American Conference on Hospital Service. Papers will be read on the following subjects: Medical Education, Medical Examinations and Licensure. The Organization of the Public for Coöperation with the Medical Profession, and Hospital Dispensary Service. Many eminent speakers from all over the country are scheduled to appear on the program, which promises to be extremely interesting as well as educational.

At the last meeting of the Directors of the Rocky Glen Sanatorium a program of enlargement and increase in the available beds was planned. An addition to accommodate 40 beds will be built at once and continued construction will proceed as rapidly as conditions will warrant. A Tuberculosis Colony will be established, where not only the patient may be taken care of, but where the family can find suitable living arrangements during the treatment and convalescence of the patient. To provide for this enlargement and development, the Sanatorium has issued preferred stock, bearing 8 per cent dividend, payable semi-annually, nontaxable and non-assessable. During the past year the staff has been enlarged and a number of well trained tuberculosis experts have been added. Dr. Fayen was former Chief of the T. B. Section, U. S. Veterans Bureau, and Mr. Phillips was a member of the staff of the Ohio State Sanatorium, Mt. Vernon, for the past ten years.

Dr. Joseph MacDonald, managing editor and publisher of *The American Journal of Surgery*, and copublisher of the *Medical Pickwick*, died suddenly in his office on January 7th, of cerebral hemorrhage, at the age of 51 years. Dr. MacDonald was born in Branchville, New Jersey, in 1870. He rose from office boy to manager in the office of the *International Journal of Surgery*. After receiving his degree in medicine, in 1905, he resigned from that position to establish the Surgery Publishing Company and the *American Journal of Surgery*. Dr. MacDonald was ex-president and for many years secretary of the American Medical Editors Association, an organization in which he was an active and earnest factor. He was an officer in the Medical Reserve Corps of the U. S. Army, and during the war rose to the rank of major. A few months after his discharge from the army in 1919, Dr. MacDonald suffered a cerebral hemorrhage, from which he recovered largely by dint of plucky perseverance. He is survived by his wife, and one sister, Mrs. W. C. McKeesby, Syracuse, N. Y.

The annual meeting and conference of the Pennsylvania Tuberculosis Society, held at Harrisburg, January 24, 25 and 26, from the standpoint of interest and the value of the addresses and discussions, was one of the most successful ever held by the Society.

The subject, "An Adequate Tuberculosis Program" was discussed by Dr. Allen K. Krause of Johns Hopkins Hospital, Baltimore; Dr. Edward Martin, State Commissioner of Health of Pennsylvania; and Dr. C. Howard Marcy, of the Pittsburgh Tuberculosis League. "Health Education in Pennsylvania Schools" was the subject of Dr. Charles H. Keene, Director of Bureau Health Education, State Department of Public Instruction, and at the same session Charles M. DeForest, National Crusade Executive, spoke on the "Future Possibilities of the Modern Health Crusade"; and Dr. H. R. M. Landis, of the Henry Phipps Institute, Philadelphia, on the "Place of Nutrition Clinics in Tuberculosis Prevention." The speakers on the subject, "The United Fight Against Tuberculosis" were Dr. James Alexander Miller, President of the National Tuberculosis Association; Dr. Thomas McCrae, Jefferson Medical College, Philadelphia; and R. B. Sinclair of Erie. Dr. Charles J. Hatfield, Managing Director of the National Tuberculosis Association, made a strong presentation of the question "Significance of the Christmas Seal Sale"; and Dr. George Thomas Palmer, President of the Illinois Tuberculosis Association, gave many excellent points on establishing county tuberculosis hospitals.

One of the most interesting sessions was that on "Tuberculosis in Industry" at which the speakers were Dr. L. R. Thompson, Division Industrial Hygiene and Sanitation, U. S. Public Health Service; Dr. Mervyn Ross Taylor, of Philadelphia: Dr. Frank A. Craig, of the Henry Phipps Institute, Philadelphia; and Dr. F. S. Kellogg, of Pittsburgh.

Health dramatics and demonstrations had an important part in the conference. Miss Maria Halsey Stryker strongly presented this growing feature of public health work and also directed a performance by Pierrot and the Health Fairy, connected with the Philadelphia Health Council and Tuberculosis Committee. Miss Gertrude Munday appeared as Pierrot and Miss Phœbe McCartney as the Fairy. Children from the Steele school in Harrisburg presented the health playlet "Seven Keys."

The Society adopted the following resolution:

Resolved, That the members of the Pennsylvania Tuberculosis Society, assembled in annual meeting in Harrisburg, January 25, 1922, hereby recommend to the National Tuberculosis Association that arrangements be made whereby the International Union on Tuberculosis shall be invited to meet in Philadelphia during the Sesqui-Centennial Celebration in 1926, also that arrangements be made whereby the annual meeting of the National Tuberculosis Association in 1926 shall be held in the same place; and be it

Further Resolved, That copies of this resolution shall be forwarded to the National Tuberculosis Association, the Chairman of the Sesqui-Centennial Celebration and to the Mayor of Philadelphia.

This meeting marked the thirtieth anniversary of the founding of the Pennsylvania Tuberculosis Society, the first organization of its kind in America.

The nine retiring directors were reëlected and E. A. Woods, President of the Pittsburgh Tuberculosis League, and Dr. John L. Sagerson, of Johnstown, were elected directors to fill vacancies. The retiring officers were reëlected, headed by Dr. James M. Anders, of Philadelphia, as president.

The report of Arthur M. Dewees, Executive Secretary, stated "two outstanding items of interest and causes for satisfaction are the lowered tuberculosis death rate in the state and the steps taken more effectively to combat the disease through the providing of county tuberculosis hospitals." The report also showed that the local organizations affiliated with the Pennsylvania Tuberculosis Society employ seventy-two persons paid wholly or in part from the Christmas Seal funds.

BOOKS RECEIVED

Annual Report of The Rockefeller Foundation, 61 Broadway, New York, 1920. The Rumford Press, Concord, N. H.

Transactions of the College of Physicians, Third Series, Volume XLII, Philadelphia, 1920. Edited by Walter G. Elmer, M.D.

Medical and Surgical Reports of the Hospital of The Protestant Episcopal Church in Philadelphia, Volume V.. Press of Wm. J. Dornan, Philadelphia, 1920.

Lessons on Tuberculosis and Consumption, by Charles E. Atkinson, M.D. 470 pages and illustrations. Price $2.50 net. Funk & Wagnalls Company, New York, Publishers.

The Surgical Clinics of North America, December, 1921, Volume I, No. 6—New York Number. Published by W. B. Saunders Company, Philadelphia and London.

Annual Report of the Surgeon General of the Public Health Service of the United States for the Fiscal Year 1921. Washington: Government Printing Office, 1921.

"Deafness Cures" prepared and issued by the Propaganda Department of the Journal of the American Medical Association, 535 North Dearborn St., Chicago, 1921. Price 15 cents.

Proceedings of the Fifteenth Annual Meeting of the Association of Life Insurance Presidents held in the Hotel Astor, New York City, December 8 and 9, 1921.

Proceedings of the Connecticut State Medical Society 1921, 129th Annual Convention, held at Hartford, May 18th and 19th, 1921. Editor, Charles Williams Comfort, Jr. Published by the Society.

The Evolution of Modern Medicine, A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913, by Sir William Osler, Bart., M.D., F.R.S. New Haven: Yale University Press. London: Humphrey Milford, Oxford University Press, MDCCCCXXI.

Ephraim McDowell, "Father of Ovariotomy" and Founder of Abdominal Surgery, with an Appendix on Jane Todd Crawford by August Schachner, M.D., F.A.C.S., Louisville, Kentucky. Publishers: J. B. Lippincott Company, Philadelphia and London.

Pitfalls, by A. J. Caffrey, M.D., Instructor in Physiology at Milwaukee Medical College, from 1901 to 1910. Assistant Professor of Medicine at Marquette University School of Medicine, from 1913 to 1920. Richard G. Badger, Publisher, The Gorham Press, Boston. Price $2.00 net.

Ringworm and Its Successful Treatment, by John P. Turner, M.D., Medical Inspector of Public Schools, Philadelphia, Pa., illustrated by eight half-tone engravings. Publishers: F. A. Davis Company, Philadelphia, 1921. Price $1.00 net.

Cosmetic Nostrums and Allied Preparations. Part I, Preparations for the Skin; Part II, Preparations for the Hair; Part III, Deodorants, Depilatories, etc. Prepared and issued by the Propaganda Department of the Journal of the American Medical Association, 535 North Dearborn St., Chicago, 1921. Price 15 cents.

Essentials of Laboratory Diagnosis, designed for students and practitioners, by Francis Ashley Faught, M.D., formerly Director of the Laboratory of the Department of Clinical Medicine and Assistant to the Professor of Clinical Medicine, Medico-Chirurgical College, etc., Philadelphia, Pa. Containing eleven full-page plates (four in colors) and seventy-eight text engravings. Seventh revised and enlarged edition. Publishers: F. A. Davis Company, Philadelphia, 1921. Price $4.50 net.

The Practical Medicine Series, Vol. V. Gynecology edited by Emilius C. Dudley, A.M., M.D., LL.D., Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago. Obstetrics edited by Joseph B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, etc. Series 1921. Chicago: The Year Book Publishers. Price $1.75.

Clinical Diagnosis—A textbook of clinical microscopy and clinical chemistry for medical students, laboratory workers and practitioners of medicine by Charles Phillips Emerson, A.B., M.D., late resident physician, The Johns Hopkins Hospital, and Associate in Medicine, The Johns Hopkins University; Professor of Medicine, Indiana University School of Medicine. 156 illustrations. Fifth edition entirely rewritten and reset. Publishers: J. B. Lippincott Company, Philadelphia and London. Price $7.50.

Epidemiology and Public Health—A text and reference book for physicians, medical students and health workers, by Victor C. Vaughan, M.D., LL.D., Chairman of the Division of Medical Sciences of the National Research Council; Emeritus Professor of Hygiene in the University of Michigan, assisted by Henry F. Vaughan, M.S., Dr. P. H., and George T. Palmer, M.S., Dr. P. H., of Detroit. Vol I, Respiratory Infections. Publishers: C. V. Mosby Company, St. Louis, 1922. Price $9.00.

The Submucous Resection of the Nasal Septum, by W. Meddaugh Dunning, M.D., Consulting Otologist, Fordham Hospital, N. Y. C.; Consulting Otologist, Manhattan State Hospital, N. Y.; Consulting Laryngologist, Ossining City Hospital, Ossining, N. Y.; Consulting Laryngologist, The Alexander Linn Hospital, Sussex, N. J.; Assistant Surgeon, Manhattan Eye and Ear Hospital, N. Y.; Surgeon, Bronx Eye and Ear Infirmary, N. Y.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA. Philadelphia Number, November, 1921. Vol. V, No. 3. Philadelphia and London: W. B. Saunders Company.

This issue of the Clinics contains a number of unusually interesting articles. Among the more noteworthy are those of Riesman on Abdominal Manifestations of Thoracic Diseases; Sailer on Some Mistakes in Abdominal Diagnosis; Spiller on Aerocele of the Brain; Krumbhaar on Pitutitary Disorders; while those of Schamberg and Klauder and of Kolmer dealing with the Wassermann reaction have important technical and clinical value. There are other practical articles as follows: Anders on Functional Cardiac Disturbance; Wolferth on Quenidin Therapy; Peirsol on High Bloodpressure; T. C. Kelly on Dissecting Aneurysm of the Aorta; Torrey on Emphysema; Jackson on Bronchoscopy; Norris on Acute Tuberculosis; Landis on Occult Tuberculosis; Funk on Pulmonary Tuberculosis and on Clubbing of the Fingers; Pepper on Postoperative Pulmonary Complications; Kern on Dust-Sensitization in Bronchial Asthma; McCrae on Acute Nephritis; Weiss on Urea-Concentration Test for Kidney-Function; T. S. Miller on Duodenal Ulcer; Weisenburg and Patten on Pituitary Disorders; Musser on Leukemia; Fox and Farley on Sternberg's and Hodgkin's Diseases; Pfahler on Hyperthyroidism; Mohler on Renal Glycosuria and on Tumors of the Neck. A. A. E.

VICE AND HEALTH PROBLEMS—SOLUTIONS, by John Clarence Funk, M.A., LL.B. J. B. Lippincott Company, Philadelphia and London. 174 pages. Price, $1.50.

In this work, which is intended for the general public rather than the medical profession, is a very frank expression of the author's opinion in regard to a most vexing problem, viz., vice and its effect upon the health of the community. While this review should be more especially aimed to call the attention of the public to the work, yet we cannot help but feel a hearty interest in the welfare of the public, and we feel that the profession should be greatly interested in this book. Hence, we urge our readers to peruse this volume in the interest of good morals and public health. V. S.

A COMPEND OF HUMAN PHYSIOLOGY ADAPTED FOR THE USE OF MEDICAL STUDENTS, by Albert P. Brubaker, A.M., M.D., author of "A Textbook of Physiology"; Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; formerly Professor of Physiology in the Pennsylvania College of Dental Surgery; formerly lecturer on Anatomy and Physiology in the Drexel Institute of Art, Science, and Industry; Fellow of the College of Physicians of Philadelphia. Fifteenth edition with 26 illustrations. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. $2.00 net.

In these days of students' books on physiology, wherein the material is mostly adapted to the young physiologist rather than the medical student, the reappearance of the little compend of Brubaker in the clothing of a new edition is very welcome. Above all Dr. Brubaker is in thorough sympathy with the medical student. He knows his physiological curiosities, his difficulties, his needs, and he is able to meet them all. Again the architecture of this little book, built upon the foundations of anatomy, is so simple in design that every part is easily entered and one does not get lost. In short, when a question sends the student to this book it is easily searched out and found. Further, this splendid teacher has mastered the art of "putting things" not only clearly but briefly. There are no long journeys through intricate descriptions and redundant material. The facts stand out boldly, and the material desired is as quickly obtained as when a dictionary is used. Finally the new things in physiology are well represented. The internal secretions receive considerable space, comparatively; indeed in the reviewers opinion, it includes all of the material that is substantial and frees the student of a great deal of hypothesis, much of which is useless. The chemistry of respiration likewise engages considerable attention, and the newer advances are referred to. Indeed, none of the subjects which are at present receiving much consideration have escaped the writer. All the chapters are equally good, clear, lucid and well balanced. Every medical student needs this book.

Edward Lodholz.

GENERAL PATHOLOGY. An introduction to the study of medicine; being a discussion of the development and nature of processes of disease, by Horst Oertel, Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and the Royal Victoria Hospital. First Edition. Pp. 357; no illustrations. New York: Paul B. Hoeber, 1921.

This is not a textbook but a general treatise on pathological processes considered from the standpoint of physico-chemical laws. The author has also endeavored to explain present ideas by historical discussions and to visualize as much as possible pathological processes by laying emphasis upon the gross and microscopical changes. Much of the book is written in a philosophical style and while designed for general reading as an introduction to medicine, is not likely to be fully appreciated by the average undergraduate student. The style is a departure from the usual and the book can be recommended as of value for collateral reading.

J. A. Koemer.

SURGICAL ANATOMY (Third Edition), by William Francis Campbell, A.B., M.D., F.A.C.S., Brooklyn, N. Y. Philadelphia: W. B. Saunders.

Before the World War, it had become the fashion for a surgeon to enter his specialty through physiology. Anatomy, while perhaps not forgotten, was certainly relegated to the background. The war emphasized the need for "anatomical" surgeons and, to quote one of our most distinguished surgeons who knew whereof he spoke, "They were few." One of the great lessons also taught by the war was, to quote the author of this work, "to teach the surgeon to think in terms of ultimate function." Bearing these facts in mind, this work has been well conceived and well carried out. No pretext is made to supply in this single volume an exhaustive treatise on anatomy. The subject-matter covered, however, has been well selected and made into "a living thing" by always emphasizing the altered function dependent on deviations from the normal.

The illustrations are among the best the reviewer has seen and greatly enhance the value of the text. For example, those illustrating the various varieties of dislocation at the shoulder joint show at a glance the position of the humeral head in each dislocation and why the normal function of the upper limb is so altered. All of the other illustrations are equally as good and the reviewer congratulates the illustrator, Mr. F. A. Deck, not only on his artistic ability, but as much on the ability to make it utilitarian. The author modestly states that the facts covered in the book are "products of many minds and the accumulation of many years," and that only the manner of their presentation and the attempt to estimate their clinical values are original. The reviewer believes that the author has entirely succeeded in this undertaking. J. S. Rodman.

THE AMERICAN YEAR-BOOK OF ANESTHESIA AND ANALGESIA 1917-1918, F. H. McMechan, A.M., M.D., Editor. Surgery Publishing Company, 15 East 26th Street (Madison Square North), New York City. 471 two-column pages, 200 illustrations. Price postpaid, $10.00.

The field of anesthesia and analgesia in ordinary medical literature can never be so well covered as by those who make special effort to present to the profession a finished exposition. In the American Year-Book of Anesthesia and Analgesia we find the most advanced discussion, especially upon the difficult cases wherein anesthesia is required. This we find in chapter on "Complicating Factors of Anesthesia." The work is complete from every angle, pointing to the best in medical literature up to the time the work was placed before the profession. This book, while of necessity limited largely to those who specialize in the department of anesthesia and analgesia, yet is of equal value to hospitals and surgeons, who should refresh their knowledge upon this most important subject. V. S.

THE MEDICAL CLINICS OF NORTH AMERICA. September, 1921. Mayo Clinic Number. Volume V, Number 2. Philadelphia and London: W. B. Saunders Company.

This unusually interesting volume of the Clinics contains articles as follows: Diseases of the Chest, with special reference to Pneumothorax by Dr. W. S. Lemon and Dr. A. R. Barnes; Primary Cancer of the Lung by Dr. R. D. Carman; Angina Pectoris by Dr. F. A. Willius; Cardiospasm by Dr. H. S. Plummer and Dr. P. P. Vinson; Gastric Retention by Dr. D. M. Berkman; Sequels of Operations on the Gastro-Intestinal Tract by Dr. G. B. Eusterman; Sigmoidal and High Rectal Polyps by Dr. L. A. Bule; Hypersensitiveness to Food-Proteins by Dr. A. H. Sanford; Retinitis of Acute Nephritis by Dr. W. L. Benedict; The Relation of Focal Infections to Diseases of the Urinary Tract by Dr. H. C. Bumpus, Jr.; Studies of Focal Infection and Elective Localization by Dr. E. C. Rosenow; Malignant Disease of the Liver and Gall-Bladder; Chronic Dental Infection; Exophthalmic Goiter with a Familial History of Diabetes Mellitus, by Dr. R. Fitz; Hyperthyroidism by Dr. W. M. Boothby and Dr. I. Sandiford; Diabetes Mellitus by Dr. R. M. Wilder; Polyuria and Diabetes Insipidus by Dr. L. G. Rowntree; Syphilis and Arsphenamin by Dr. J. H. Stokes; Tardy Paralysis of the Ulnar Nerve by Dr. W. D. Shelden; Arteriosclerosis of the Nervous System by Dr. H. W. Woltman; The Sphenopalatine Ganglion Syndrome by Dr. R. A. Barlow; The Treatment of Dysmenorrhea by Dr. L. J. Stacy and Dr. E. G. Joseph; Echinococcus Disease by Dr. T. B. Magath.

A. A. E.

"THE LIFE OF ELIE METCHNIKOFF," by Olga Metchnikoff. Houghton, Mifflin and Co., Boston and New York, 1921, with a Preface by Sir Ray Lancaster, K.C.B.

"THE LIFE OF JACOB HENLE," by Victor Robinson, M.D., editor of Medical Life. The Medical Life Co., New York, 1921.

These two new biographical sketches are worthy of careful perusal by every medical man. In each he may find inspiration and comfort. From each he will learn that the great man is human—is born, lives, suffers and dies like any other man. In the course of time, as the success of their achievements causes their names to shine forth from the pages of literature, great men are apt to become supermen in the estimation of those who inherit the results of their labors. The details of their daily affairs being forgotten, they are frequently pictured as great and solitary souls serenely perfecting their discoveries in the midst of quiet and placid surroundings, excelling their fellows in originality and accomplishment and accorded grateful recognition and profound admiration. There may have been cases in which this was true, but in the great majority of cases it was not; the lives of great men are usually chronicles of bitter contests, acrimonious controversy, misunderstood ambition, and unrewarded labors. Read these two books and see.

In the first of them Mme. Metchnikoff presents her husband to the reader as a man simple, kindly, lovable, capable, intelligent, ambitious, and original, but capable of bursts of furious passion and fiery determination when the validity of his theories was questioned. In it the loving wife pays a final tribute to her husband. It reads like a faithful portrayal of the life and work of one beloved and admired, and so, no doubt it is for the most part. But there are two things for the reader to observe: first, it is written by a wife, and second, the subject of the biography knew that it was to be written, was interested in its success, and offered suggestions as to what it should contain.

Can a wife correctly appraise the merits and demerits of her husband? Well the reader must judge of that for himself. With all the prejudice of affection and the sorrow of loss to blind her eyes to certain things, and with a firm conviction that all he did was right, she has done well, and has produced a book that presents the great exponent of phagocytosis very much as we knew him from casual acquaintance and a brief period spent under his tuition.

It is worth reading; it is worth while to follow Metchnikoff as his career develops and his work expands. Born at Panassovka, in Russia, spending his early days in Kharkoff, starting after longing to work under a great man, for Würtzburg, to be with Kölliker, he found himself received so coldly at Leipzig that he turned back in melancholy disappointment. Later he worked with Leuckhart and with Cohn, went to Heligoland and afterward to Naples. He married Mlle. Fedorovitch, and immediately became the unfortunate husband of an invalid wife, harassed by financial difficulties, and obliged to sojourn at Madeira for her benefit and to his own disadvantage. After her death from tuberculosis, he went upon anthropological expeditions to the Kalmuk steppes, became professor at Odessa, and then began a life filled with distractions arising from the constant intrigues and bickerings of the Russians, from which he was only too glad to escape when Pasteur offered him a refuge as well as an opportunity at the new "Institute" at Paris. Thither he moved with his family, and there he spent the remainder of his life, actually dying in the Institute, where his ashes now rest in the library. All the record of his scientific work is given in the book, which closes with a bibliography of his many contributions to science.

The other book has a different origin. The author, living a generation after the death of his hero, whom he did not know personally, collects his works, reads the documents he is able to collect, and then sets himself to write an account of his life not as it appeared to his contemporaries, but to a new generation. The writing is without prejudices but there are sentimental touches. The hero is such by election, not through matrimonial connection. Time has shown the actual worth of his achievements. There is no doubt about what future generations will think—they must think as we do. What Metchnikoff may have thought about the phagocytes as the defenders of the body against infection, or about the intestinal bacteria as the sources of the poisons that precipitate the arrival of old age may be controverted by the discoveries of the next decade, but the additions that Jacob Henle made to the knowledge of human anatomy must stand forever, even though his connection with them may be forgotten with the lapse of time.

It is a delightful account of Henle that the biographer gives, and whoever reads it cannot but feel an affectionate regard for the man who so early asserted his superiority over his contemporaries. But his life was by no means free from care; no, while a student he made the mistake of joining a "Burchenschaft," and in later years he suffered for it in prison, and by being excluded from a chair in the University of Berlin. Like Metchnikoff, he was to a certain extent an enforced peripetetic, and held position after position in different universities, until he came to rest at Göttingen where, in spite of the offer of a better position, he elected to spend the remainder of his days, and finally died.

There is little of the melancholy about Henle as the biographer depicts him. He is the young Adonis, the boon companion, the man of many friends, the musician with a parlor full of congenial spirits, whom he leads in amateur orchestral performances, the great teacher at whose feet young men eagerly sit to learn, the famous professor beneath whose window they appear in torch-light processions to congratulate him upon the semicentennial of his life.

It is the account of a life active, energetic, inspiring, uplifting, and not without humor is it presented, for the snatches of early letters included in it are sometimes very funny.

The books form a marked contrast; the first is in melancholy vein, the second joyous. Is it the difference in temperament between the heroes or is it the difference in the biographers? J. McF.

HISTORY OF MEDICINE. WITH MEDICAL CHRONOLOGY. SUGGESTIONS FOR STUDY AND BIBLIOGRAPHIC DATA, by Fielding H. Garrison, M.D., Lt.-Colonel. Medical Corps, U. S. Army, Surgeon General's Office, Washington, D. C. Third Edition. Revised and Enlarged. Octavo of 942 pages with 257 portraits. W. B. Saunders Company, Philadelphia and London, 1921. Cloth, $9.00 net.

A review of a chronological recital such as found in the third volume of Dr. Garrison's History of Medicine must of necessity deal briefly with many of the men of medical science, and yet in this volume we find much of interest to the average medical reader. True it is that authors differ as to the value of the work accomplished by some of the workers in medicine—hence, more prominence is given to one over another. The only criticism we have to make of this work is that a few more of the prominent American men in medicine should have found place in this history. However, we can feel that it is a work eminently fitted for the busy physician to renew his touch with the lives of those who have preceded him in the great field of medical art and science. V. S.

"A TREATISE ON THE TRANSFORMATION OF THE INTESTINAL FLORA, WITH SPECIAL REFERENCE TO THE IMPLANTATION OF BACILLUS ACIDOPHILUS." By Leo F. Rettger, Professor of Bacteriology, Yale University, and Harry A. Cheplin, Seessel Fellow in Bacteriology, Yale University. From the Sheffield Laboratory of Bacteriology, Yale University. New Haven, Yale University Press: London, Humphrey Milford, Oxford University Press, 1921.

This little book of 135 pages, is a type of monograph that every one interested in the progress of science in the United States must welcome. It deals with one problem, covers it thoroughly, discusses it from all points of view, and then relates in detail the elaborate researches by which the authors proceeded to its elucidation and the conclusions at which they arrived. At its end a complete bibliography of the subject is appended.

It is difficult reading, for it is replete with tables of the details and results of experiments, but it is all the better for that, and it leaves the industrious student with something more than opinion upon which to base his future therapeutics.

The subject-matter resolves itself into a very simple question: Bacteria occur in the intestine in enormous numbers, and in considerable variety, living upon its contents, which are partly transformed into putrefactive products, some of which appear in the urine as ethereal sulphates, especially indol and phenol, which are looked upon by many as injurious. Metchnikoff, indeed, regarded them as prime factors in bringing about vascular and other disturbances leading to premature old age, and discussed his view at great length in his well known book "The Prolongation of Life." According to him, by the substitution of a more considerably vegetable for the usually excessively meat diet of civilized man, and the replacement of the usual intestinal bacterial flora by a new one in which Bacillus bulgaricus was supposed to be the most important species, the protein putrefaction can be interrupted, the formation of indol and its related products inhibited, their ill effects prevented, and longevity increased. To this end he laid out for himself and his followers a strict dietetic regimen, including large quantities of milk soured by Bacillus bulgaricus, after the fashion of certain Asiatic peoples among whom he found longevity common. He, himself, succumbed to cardiac disease at 71 years, but was not dismayed as he saw his end approaching, believing that the new system of living, to which he gave the name "*orthobiosis,*" was, in his own case begun too late.

The researches of Rettger and Cheplin have to do with the problem of displacing the usual intestinal flora by the less offensive one. It was found that the theory of Metchnikoff was defective in that through the method he adopted, Bacillus bulgaricus was not acclimatized in the intestine, but that the consumption of milk permitted the development of another regular inhabitant, Bacillus acidophilus, and that such antifermentative effects as were noticed resulted from its excess over Proteus vulgaris and other putrefactive microörganisms. They therefore conclude that "the value of sour milk feeding does not lie in the lactic acid producing bacteria in the milk, nor in the acids which they produce," as "practically the same results were obtained whether sweet or sour milk was fed." * * * "The beneficial results which have been attributed to yoghurt and other Oriental sour milk products, have in all probability been due to the milk, as such, rather than to the acid producing bacteria which they contain. Milk by virtue of its milk-sugar stimulates proliferation of B. acidophilus in the intestine. This important fact was apparently overlooked by Metchnikoff and his

(*Continued on page xiv*)

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ORIGINAL ARTICLES

ABDUCTION TREATMENT IN FRACTURE OF THE NECK OF THE FEMUR*

GEORGE M. DORRANCE, M.D., AND
EUGENE C. MURPHY, M.D.
PHILADELPHIA

We have used the abduction treatment with the plaster spica in all our cases of fracture of the neck of the femur, including the intertrochanteric fracture. The patients we have been called upon to treat have not been fit subjects for any form of open surgical treatment.

Charles Davison[1] states that autoplastic transplantation of bone is of value in three types of defects of the head and neck of the femur, but in all cases the patient must be vigorous enough to withstand the operation and young enough as an economic possibility to warrant the attending discomforts and dangers of the procedure and the expense and effort required for a successful issue. Adhering to this statement, we find that all of our cases could and would be eliminated from any form of autoplastic surgery.

Royal Whitman[2] states that the question to determine is whether the patient is of the operable or inoperable class. He, personally, does not admit an age limit for repair and believes that a treatment which relieves pain, prevents bed sores, and holds out to the patient a prospect of restored function, is, as a rule, more conservative from the life-saving standpoint than neglect and its consequences, and we may add to this that many of our patients had incontinence of urine and feces which subsided after placing them in the plaster spica.

Our routine procedure is as follows: On admission to the hospital, an x-ray picture is taken of the injured member, and we insist on a stereoscopic view in all cases. On the following day, the patient is taken to the operating room wearing a thick cotton fleece-lined union suit. The patient is placed on extension operating table and given a general anesthetic. After the patient has become anesthetized, the perineum is brought down against the perineal post, the well limb is brought out to the side to its extreme limit of normal abduction; the foot is placed in the stirrup, where it is fixed, and a moderate degree of extension is exerted and the limb is left fixed in that position.

The treatment of the fracture depends upon the position of the fragments and its resulting deformity. The deformity in a fracture of the neck of the femur is usually as follows: The head is always fixed in the acetabulum, therefore the inner fragment is fixed and the outer, or lower fragment which is movable, is the one that becomes displaced. The displacement is upward, backward, inward with outward rotation. Now to correct this deformity, the assistant makes extension downward with a strong pull and the operator makes extension outward in the upper third of the thigh and at the same time manipulates the fragments into position. The limb is now placed in the position of abduction to the same degree as that permitted on the normal side. By this means the neck is brought to a horizontal plane. The capsule surrounds both fragments; the head is fixed in the acetabulum, consequently the tension of the capsule aligns the two fragments and forces an end to end contact. On extreme abduction, the upper border of the shaft fragment and trochanter are opposed to the rim of the acetabulum and the side of the pelvis. Now the foot is rotated inward in the slightly over-corrected position, the limb is measured and compared with the measurement of the normal limb. If there is no shortening, the foot is placed in the stirrup and fixed in position with firm traction exerted downward. We apply a layer of table felt which has been cut and rolled into bandages. This is applied from about the middle of the thorax down to and including the foot of the fractured side and well down over the buttocks of the opposite side. This spica cast is reënforced on the outer side by a rod of iron, one-half inch wide, extending from the upper extremity of the cast to the external malleolus. The inguinal region and the knee are also reënforced, using a heavy wire mesh. The plaster spica is now completed in two layers, covering the entire surface, including the foot.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

A large pad, which is to be removed after the cast has set, is inserted under the felt over the abdomen. After the cast has set, the patient is placed in bed with the head of the same elevated. As soon as the patient is out of the anesthetic, the cast is trimmed out around the genitalia and rectum. A stereoscopic picture of the fracture is taken the following day. We place a Balkan frame over the bed and a bird swing is placed at the head of the same. This permits the patient to elevate himself for the use of the bedpan, etc. The cast just above the foot is attached to a Balkan frame by means of rope and pulley so that the correct amount of weight will balance the foot in any position desired.

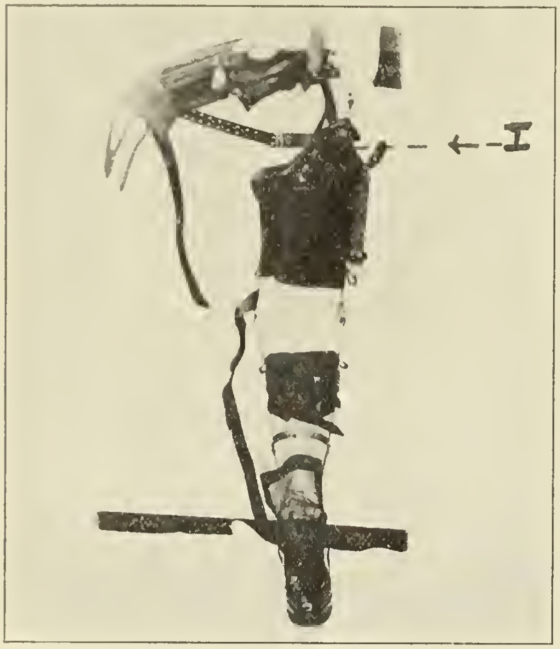

Fig. 1

After the third day, we change the patient from side to side, often placing him on the abdomen. After the first week, if the patient is strong enough, we have him placed on a wheel chair for a few hours each day, which time is largely spent on the porch. The length of time we permit these casts to remain on patients is now extended by us from thirteen to sixteen weeks in all our patients over fifty-five years of age.

When should we break up an impacted fracture? In answer to this question, we consider any deformity which interferes with function must be corrected. We have found these impacted fractures with displacement of the fractured surface and their associated deformities very unstable and in consequence have no difficulty in breaking up the deformities. In our series of cases, this was never necessary in old cases.

To break up the impactions, we use the following method: The leg is flexed on the thigh and the thigh is flexed on the abdomen. The thigh is then rotated externally, at the same time pulling forcibly upward. At this time, the impaction is broken up and the leg is then extended in the inverted position, thus overcorrecting the deformity.

Dr. W. C. Campbell[3] gives the following report of cases, showing the results to be expected following the abduction treatment with the plaster spica: Majority of patients over 60 years of age. Seven cases, too recent to report; 1 case, not traced; 5 deaths; 28 intracapsular (central); 24 recovered, with bony union and good function, 89.2%. Similar results obtained in all the cases of extra capsular type. A total of 94.9%. In the majority of cases, a slight limp presented itself, but quite a number walk perfectly.

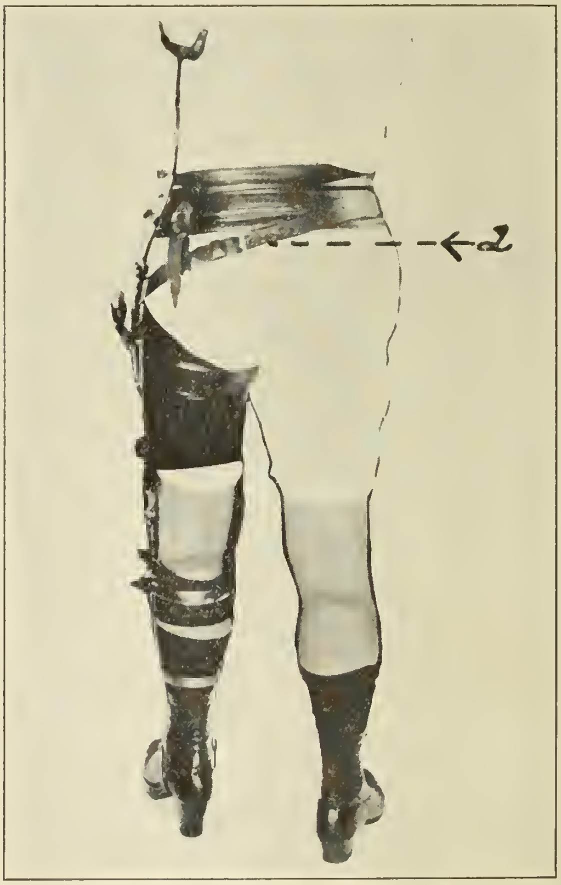

Fig. 2

In our recent report of twenty cases,[4] we obtained the following results: 1 patient was 37 years; 1 patient was 50 years; the rest of the

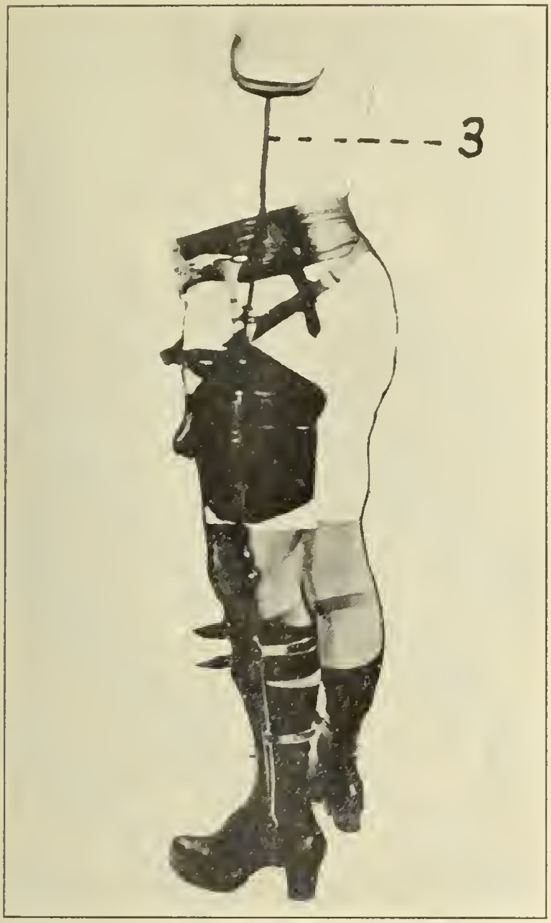

Fig. 3

patients ranged from 60 to 80 years. Five patients had incontinence of urine and feces on admission, which disappeared after the application of the cast in from five to nine days. Six had bed sores on admission, which cleared up in from four to twelve days after application of the cast. No bed sores developed after patients were placed in the casts. Two deaths.

One of the most interesting points brought out in this series of cases is the x-ray report of pictures taken of the fracture after removal of the cast. All but two showed a dense fibrous union, although clinically all but one seemed to have osseous union. The two cases that showed osseous union are the two youngest on the list, one 37 years and the other 50 years. All but two cases show a slight atrophy of the neck.

The final result of these cases shows the following: Nine good functional result; three slight limp but capable of walking; five walk with aid of a cane; one shows partial absorption of neck with shortening which required mechanical correction.

We have seen a number of late cases of intracapsular fractures with absorption of the neck. To our minds, these were not operable and would not be helped by the plaster spica. In this type, some mechanical support is necessary. It is surprising to find the meagerness of available braces suited for intracapsular fractures. The usual one prescribed is the Thomas splint or one of its modifications. One of our cases had on such a splint previously prescribed by another surgeon, the fitting of which was left entirely in the hands of the instrument maker and was most unsatisfactory. After rather a long study and considerable experimenting with a number of braces, we have worked out the one shown in the diagrams. In the ideal brace, there are certain requirements which must be met and there are others which are desirable. We feel we have met the essentials in our brace.

1. It is necessary that the splint be weight-bearing on the pelvis.

2. That inward pressure be made upon the

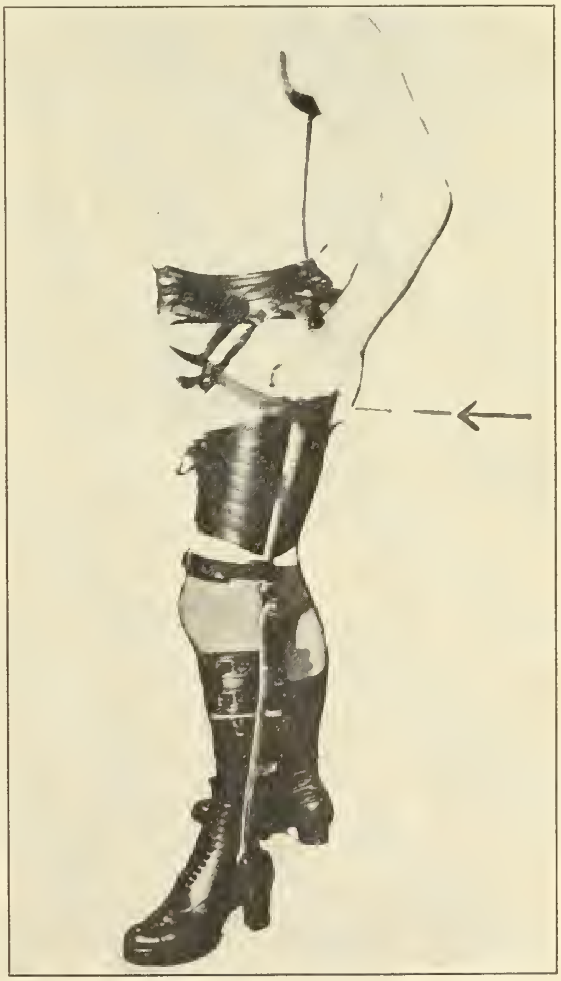

Fig. 4

great trochanter to prevent movement of the fragments.

3. It must be devised so that the patient may walk or sit down. To obtain the latter, there must be flexion at the level of the hip joint and at the knee.

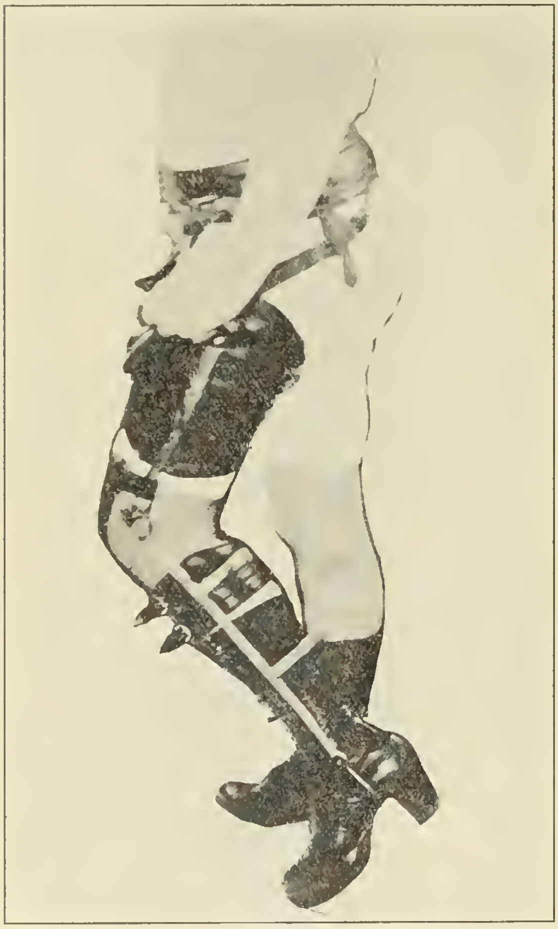

Fig. 5

The brace consists of a pelvic girdle attached to a long thigh and leg splint. The pelvic girdle is attached to the thigh splint on its outer surface by a joint which will allow flexion. The usual perineal band running from the anterior surface of the brace around to the posterior has been eliminated, and in its place we use a strap anchored at the inner side of the leather thigh cuff and attached to the pelvic girdle on the posterolateral surface just posterior to the joint. This band has proved most satisfactory and is well shown in Figure No. 1 at arrow marked 1.

In Figures No. 2 and 4, the posterior and anterior straps, made of heavy woven material, hold the splint well up against the trochanter and prevent the usual riding encountered at this place. A hinged joint at the level of the knee joint which can be locked or unlocked by the usual slide joint used in all orthopedic appliances is used. The usual bands to support the leg portion of the splint are likewise used. At the ankle joint where the brace is attached to the shoe, another slip joint is used so that the brace can be separated from the shoe. In our last case, we added to the splint a handle attached to the external rod which assists the patient in walking, as the weight is then borne on the perineum and the hand. This hand portion may have a crutch attachment—see Figures No. 2, 3, and 4—so that the weight can be borne on the perineum, axilla and hand. This brace is now giving most satisfactory results and permits patients to get around with comparative comfort.

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NONUNION OF FRACTURES OF THE NECK OF THE FEMUR*†

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Nonunion of the neck of the femur presents a surgical problem that is worthy of serious consideration. There is no doubt that the condition should not occur as often as it does. In spite of the abundant literature on the subject of fractures of the hip in recent years, the diagnosis is far too often missed and the patients condemned to a life of invalidism. Every injury to the hip, unless there are exceptional circumstances, should be checked up by a proper roentgen ray examination. Failure to make such examination often leads to disaster to the patient, loss of reputation to the physician, and loss of confidence in the medical profession as a whole.

It is not within the scope of my paper to deal with the treatment of recent fractures of the hip, but in speaking of effect the cause must be taken into consideration, and I wish to emphasize the fact that there is no reason why, in the majority of cases, bony union cannot be obtained in the neck of the femur if proper fixation is provided after the reduction of the fracture. Full abduction with internal rotation of the foot after reduction, as advocated for years by Whitman,[6] forces the fragments into apposition and holds them there. We are often told to let impaction alone, but this is a slender reed to lean on, and unless careful clinical and roentgen ray examinations disclose good position and apposition of the fragments, or unless general conditions contraindicate interference, impaction should always be broken and reduction and reposition of the fragments accomplished, just as in a Colles' fracture of the wrist, or in Pott's fracture of the ankle. Many times the histories of these patients show that an impaction which had been relied on later broke, probably on account of inadequate fixation, and nonunion resulted. My confidence in so-called impaction was severely shaken on two occasions, when the roentgenograms apparently revealed impaction and at operation distinct overriding was found; the fractured surfaces were not in contact at any point.

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†From the Mayo Clinic, Section on Orthopedic Surgery.

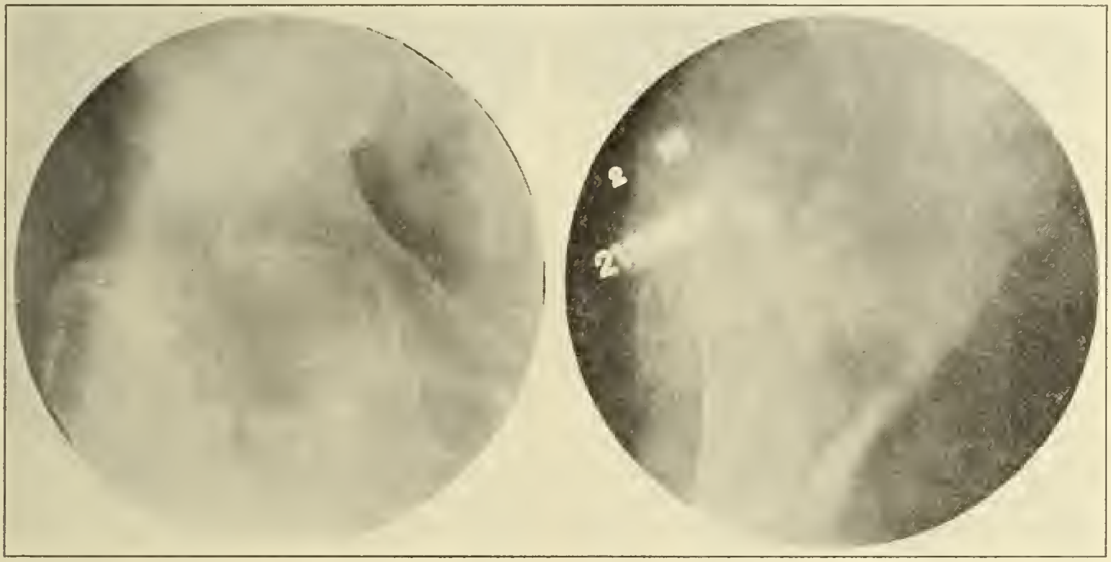

Fig. 1—Beef-bone screw used to steady fragments.

It is very difficult to deal with nonunion once it is established. However, the condition is not necessarily hopeless, and I believe that most of the patients, if they are not too old and if their general condition is satisfactory, are good surgical risks and are at least entitled to have the question of surgery presented to them so that they may consider the matter.

GENERAL CONSIDERATION OF CASES

The first point to be considered is the selection of cases for surgery. Age is not in itself a contraindication. Some patients are as young at sixty as others at forty-five. Nevertheless we must remember that regeneration of bone is not so sure or so prompt in the elderly adult as in the vigorous young adult; the majority of the patients with nonunion of the neck of the femur are more than fifty years of age. In a previous article[5] I have shown that the ages of 120 patients range as follows: between twenty and thirty years, five patients; between thirty and forty years, twenty patients; between forty and fifty years, twenty patients; between fifty and sixty years, forty-six patients; between sixty and seventy years, twenty-four patients; between seventy and eighty years, four patients; and between eighty and ninety years, one patient. Ninety-four patients of this group were dismissed without treatment. Looking backward with perspective from larger experience it seems more than probable that I would now undertake surgery in a larger number of cases.

It is perfectly obvious that if the operation will throw a strain on a patient already suffering from some terminal ailment, such as low grade nephritis, or diabetes, it should not be considered, since the majority of such patients will get on fairly comfortably after from three to five years following the accident, when the fibrous union has become strong enough to enable them to get around with a cane. Some patients suffer a great deal of pain and this may in itself warrant the surgical interference that would not otherwise be considered.

The local condition to be chiefly considered is the amount of absorption of the neck of the femur; this is a very important factor in deciding the type of operation. Roentgenograms are essential; one view should be made with the foot in inversion to show how much of the neck remains. If the patient is young and there is a good remnant of neck, the problem is comparatively easy. It is usually sufficient merely to expose and freshen the fragments, place a beef-bone screw or autogenous bone peg through the trochanter and neck into the head and maintain

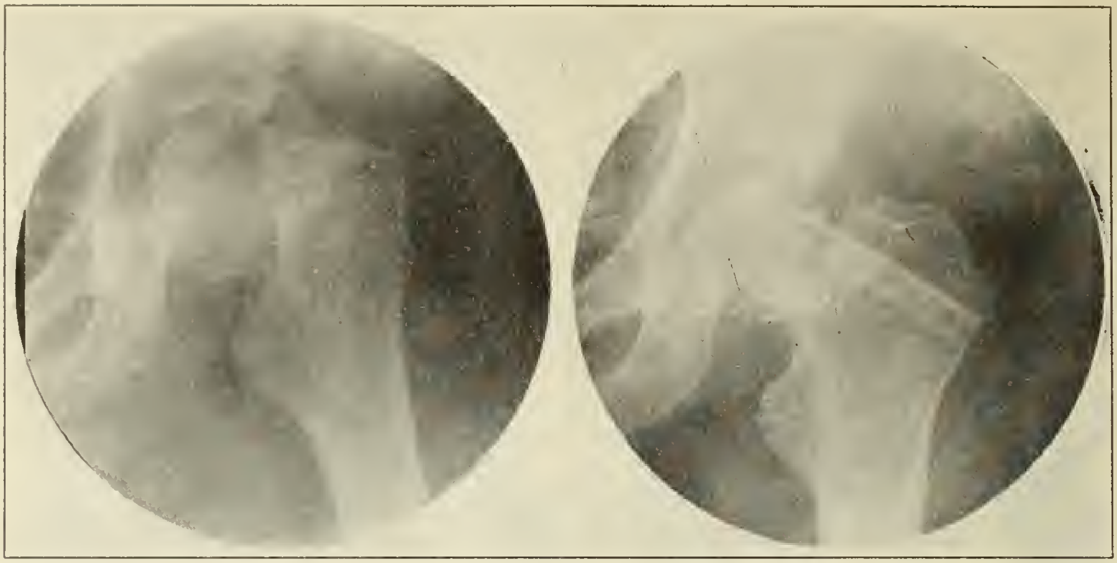

Fig. 2—Fibula used as a peg.

the position of abduction (Fig. 1). Delbet claims that arthrotomy is not necessary and that by using an ingenious instrument the peg or nail can be placed accurately. If only a fair amount of neck remains it is more difficult to get proper apposition, and in such cases I believe the transplantation of bone, either according to the method of Albee, using the tibia, or the method of Davison, using the fibula (Fig. 2) is the method of choice. Although good results have been attained by using metal nails or screws, in this day of surgical progress the use of beef-bone or autogenous pegs practically excludes their use except in unusual instances when facilities are not at hand, or the training of the surgeon is such that he feels that a bone grafting procedure is a little more than he wishes to attempt. If the neck of the femur is practically completely absorbed, as often happens in elderly patients, the problem is indeed difficult (Fig. 3); it has been the general consensus of opinion that the majority of such patients should be allowed to go their way without surgical interference. Some patients, however, are unwilling to accept this advice and wish to obtain a stability that will enable them to do without a cane or crutch. The work of Brackett, and more recently that of Whitman, has provided us with operations that promise well and enlarge our field of surgical endeavor.

The Brackett method of fixation consists practically of removing the top of the trochanter with the attached muscle, freshening the end of the femur and putting it against the freshened head, and moving the trochanter with its attached muscles farther down on the shaft of the femur (Fig. 4). In addition the bone may be pegged either with beef bone or autogenous bone.

Whitman's[7] method is to remove the devitalized head of the femur and then place the reshaped upper end of the shaft of the femur into the acetabulum and move the trochanter with its attached muscles down to a lower level on the femur (Fig. 5).

Forty-three consecutive cases of nonunion of fracture of the neck of the femur were studied in this series. The patients had had bone pegging, heterogenous or autogenous, or metal pegging operations for nonunion of the neck of the femur. The right side was affected in twenty-four and the left in nineteen patients. Twenty-

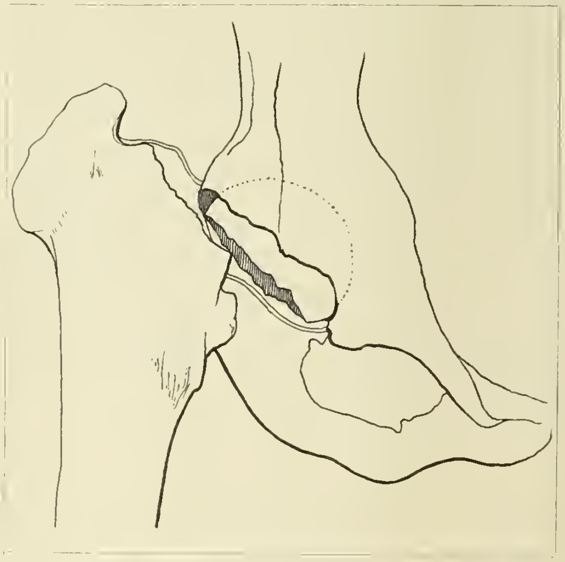

Fig. 3—Practically total absorption of the neck of the femur of an old ununited fracture.

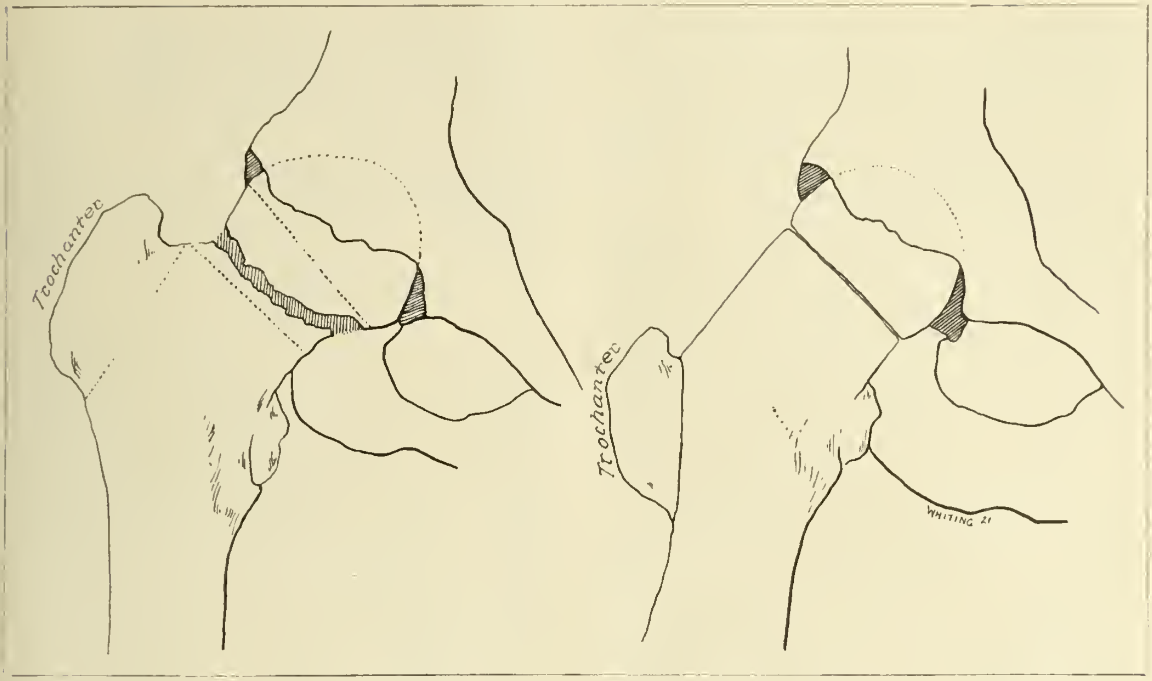

Fig. 4—Bracket's reconstruction operation.

nine patients were males and fourteen were females. The average time since the fracture was sustained and the time of operation was more than one year. Five patients were in the second decade, eleven were in the third, nine were in the fourth, seventeen were in the fifth, and one was in the sixth. Three patients in the series could not be traced. Eight were operated on by using metal nails or screws. Three operations were successful and three were failures; two patients were not traced. Twenty-five had autogenous bone pegging; fifteen were cured; nine were not cured, and one patient died on the second day of cerebral embolus. This patient had been under observation for several weeks previous to operation on account of a persistent edema of the leg which on rest in bed disappeared, and it was finally thought safe to operate. Necropsy showed a thrombus in the common iliac vein. It is probable that death was caused by a small

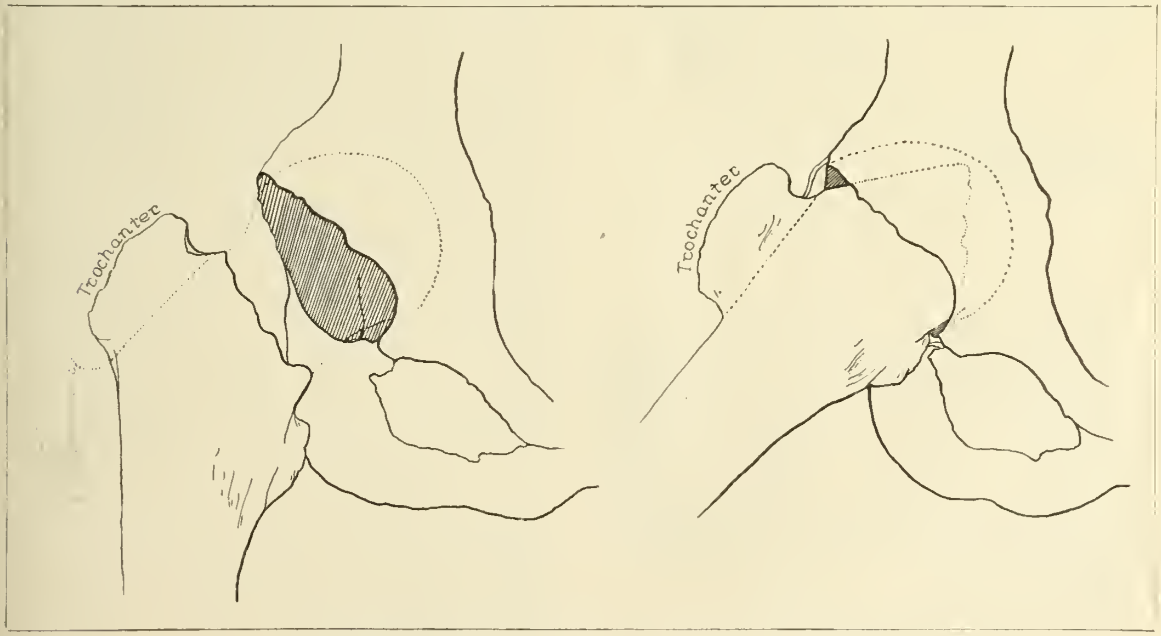

Fig. 5—Reconstruction of the neck of the femur, after Whitman.

piece of this thrombus becoming detached and passing from the right auricle to the left side of the heart through a patent foramen ovale. In seven younger patients recently operated on, beef-bone screws were used, and all were cured. Two were operated on by the Brackett method and obtained satisfactory results.

In the entire series of forty-three patients, three were not traced, thus leaving forty cases on which to base statistics. We do not know whether the result for the one patient who died of cerebral embolus would have been satisfactory or not, although the operative technic was satisfactory, but on account of her death the result must be classified as a failure. Twenty-seven patients (67.5%) were cured. They obtained bony union. Either heterogenous or autogenous pegging was used in thirty-five patients. One of these was not traced. Twenty-four (70.6%) of the thirty-four patients traced were cured. It is only fair to state, however, that some of the patients considered cured do not have ideal results. They have bony ankylosis and stability; a few have stiffness.

I believe that the main causes of stiffness following operations for nonunion of fractures of the neck of the femur are dissecting too extensively and driving in the peg so deep that injury is inflicted on the joint surfaces. In spite of the limitation of motion the results are very satisfactory; function is good.

NONUNION IN FRACTURES OF THE NECK OF THE FEMUR

Cases 43
Traced 40
Cures .... 67.5 per cent.

	Cures	Failures	Death	Not traced	Cases
Metal nails or screws ..	3	3	0	2	8
Autogenous bone	15	9	1	1	26
Heterogenous bone	7	0	0	0	7
Brackett method	2	0	0	0	2
	27	12	1	3	43

CONCLUSIONS

Obtaining union in ununited fractures of the neck of the femur is difficult. Bone pegging has given the best results. The operations advanced by Brackett and by Whitman open a wider field for surgery. So far, our experience with these two methods is entirely too small to warrant drawing any conclusions. If there is sufficient neck and the patient is not too old, bone grafting or pegging, I believe, is the method of choice at present.

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DISCUSSION

ON PAPERS OF DRS. DORRANCE AND MURPHY, AND DR. HENDERSON

Dr. Levi J. Hammond (Philadelphia): The number and variety of appliances and methods that are employed for the cure and treatment of intracapsular fractures of the neck of the femur emphasizes, to my mind, both the interest this subject excites and the fact that as yet we have not devised that sort of appliance or promoted a method that proves at all satisfactory. There is no doubt that a given number of patients will be markedly benefited by any one of the appliances or procedures, suggested; while failure in a small percentage will be met in spite of the use of any of our present methods, and it seems to me the reason is clear.

In the majority of instances the patients are past the age where constructive conditions exist within them. There is a change in the bony structures (osteoporosis) as well as in the respiratory and circulatory system, and, therefore, it is not method that fails as often as it is constitutional defect. Then too, the question of operative treatment seems to me must depend upon the character, or rather the position of the fragments. If we have a multiple fracture, or what is usual, the oblique type of fracture, we will almost surely have considerable damage done the soft tissue and in all probability serious interference with the circulation, which at most is but scanty. Therefore, we have atrophy of the neck from these senile changes, as well as very prompt atrophy incident upon malnutrition. Now then, given a patient with senile changes in the bone where there is also extensive loss of blood supply from laceration of the vessels by the bone fragment, it is not difficult to understand the frequent occurrence of failure in spite of treatment. May I remind you that the blood supply consists only of the small nutrient vessel that enters about the center of the neck from the capsule and one small one that passes down the ligamentum teres. When either or both of these are injured or destroyed, as is frequent, repair must be seriously affected. So before any operative treatment is attempted, I think we should know with clearness that nutrition is not thus impaired.

Then too, another factor in nonunion and faulty union is the difficulty in keeping the parts immobilized. The age of the vast majority of the subjects makes forced recumbency of itself a serious affliction, and ill-advised if the circulation or respiration are affected thereby. However, in the young subjects and where the blood supply has not been so seriously disturbed, I have no doubt that the methods by open treatment, so clearly brought before us this afternoon by Dr. Henderson, will prove serviceable in a very large percentage of cases, though I shall not feel disappointed if I have a goodly number of failures by its use in the more aged.

Dr. Charles E. Thomson (Scranton): In all cases of fractured femoral neck a history may be elicited of an injury more or less severe, and this injury may be the result either of direct or indirect violence; the former is the rule in elderly people, the latter in the younger. The injury is usually followed by disability, amounting to inability to walk, although there are marked exceptions to this rule.

Report of Case of the Exception: A workman was carrying a tie on his shoulder and fell over another tie, landing on the rail. He walked out of the mine and got on a street car, transferred in Scranton, and walked several blocks. On arriving home he went to bed. When seen the next day his hip was greatly swollen. Later an x-ray was taken and fracture of the neck shown. This case was not treated. He had a three-inch shortening.

If, then, a patient has sustained an injury and is unable to walk—in the absence of other palpable injury—a fracture of the neck of the femur should be suspected. If the fracture is complete, the limb is markedly rotated outwards, and if the patient is asked to rotate it inwards, he is unable to do so and the attempt gives him great pain at the seat of injury. This external rotation is in marked contrast to what is usual in dislocation of the hip. On further inspection, on comparing the limb with its fellow, the patella is noticed to be higher than on the sound side. On measurement, three distinct factors should be noted: First, what is the real shortening, as ascertained by measuring from the lowest surface of the anterior superior spine of the ilium to the plane of the lower surface of the internal malleolus? Second, does the real shortening correspond with the practical shortening, as ascertained by measuring from the umbilicus to the lower plane of the internal malleolus? If so, it is indicative of fracture of the neck. If the practical shortening is greater than the real shortening, it is indicative of some disturbance of the pelvic bones. Third, if the tip of the trochanter is above Nelaton's line, as drawn from the tip of the tuberosity of the ischium to the tip of the anterior superior spine of the ilium it is indicative of fracture of the neck, when the possibility of dislocation has been excluded. After having made the above investigations, if the conclusions from them point to a fracture, and there is still doubt, an x-ray picture should be taken.

As to treatment, I can most heartily endorse the Whitman abduction treatment, after having practiced it for more than twenty years. In upward of one hundred cases treated, we have gotten good results in all but three.

I have a very interesting case of impacted fracture to report: J. R. received a fracture of his right femur in November, 1918. It was a compensation case. No diagnosis was made until nine months later, when he came into my hands on account of legal complications. Nothing was done until December, 1918, when the patient was anesthetized, and the Whitman treatment employed, after the adductor muscle tendons—which had contracted, holding the limb in marked adduction—were divided, and a plaster of Paris cast applied in marked abduction, and left on for eight weeks.

Dr. Jonathan C. Biddle (Ashland): I did not come here prepared to discuss anything, but rather to listen, for one can learn many a point of interest from the young men's papers although sometimes they are not worth while. Dr. Thomson, of Scranton, made some splendid remarks about early diagnosis of fractures of the hip joint, but I am afraid he claims too much for accuracy of diagnosis in such cases, particularly when the x-ray will tell us just what kind of fracture we have. In the last three or four days I had a patient with a fracture of the hip joint and did not spend a moment in making a diagnosis, but had x-ray pictures made, and they diagnosed the injury. I am afraid we are coming to a point where we have visions of a harness for every patient who has a fracture of the hip joint. It seems to me that the men who advocate this method try it on only one or two fractures, and when they achieve good results, believe they have proved the value of the method. I wish at some future meeting of the Society we could hear of the results that they did not obtain; I think they would have a good many interesting cases. I know I could report some. But we exploit only those that do well. It is probable that I should do so myself, but at the same time I believe it would be very interesting to have exact reports of cases that were not held in position by harness.

I believe fully in the open operation of nearly all fractures of the hip and of the femur. I believe in seeing things with my eyes and putting the fracture together with my fingers. I think that is the best method and that it is the opinion we will all adopt in the future.

Dr. John L. Atlee (Lancaster): I should like to express my appreciation of Dr. Thomson's remarks and deplore Dr. Biddle's remarks in minimizing the value of the use of the five senses in diagnosing fracture. It seems to me that it is one of the tendencies of the day to place a great deal of reliance on laboratory methods and methods associated with laboratory methods such as the x-ray. It seems to me that one of the large reasons for failure in diagnosing these fractures is that the student is taught to rely so much on laboratory methods and the x-ray and when he gets out into practice he does not use his five senses. A great many of these fractures primarily are treated by the family physician in isolated districts and a large number could not be diagnosed with the x-ray, for the physician would not have it available. For that reason I feel Dr. Thomson's remarks were especially valuable and I object to Dr. Biddle's remarks decrying the use of the five senses.

Dr. Dorrance (in closing): If you are going to take an x-ray, take a stereoscopic. A flat picture will misguide you. If you do not you do not get a true picture of the bone and do not know where the head is.

In answer to Dr. Biddle: We reported this series of twenty cases to show the results we got; we reported two deaths. We described the cases and gave results. We have gone into the subject carefully. We are satisfied with Whitman traction. As to the brace, that is for people who are not fit for operation, and for cases of nonunion. We have to do something for these people. The brace has been more satisfactory than anything we have used. Incidentally most of these cases when they came in were not in good condition. Most of them had incontinence of feces and urine. Why they should develop this after injury and not before I do not know, but after putting them in cast the pain disappears, incontinence of urine and feces disappears in most of them; in some it does not.

Dr. Henderson (in closing): Dr. Thomson remarked on a paper that I had previously published of 120 cases of nonunion of the hip. The percentage of those in which the diagnosis had been missed at the time of the accident was practically 100%. In not a single case of 120 had anything like adequate treatment been carried out. When considering treatment I think we must remember that the object is to reduce the fracture and to maintain apposition of the fragments. It does not matter how you do it, whether by the Whitman or any other method. We treated some with the Ruth-Maxwell with extension and counterextension. By lifting the trochanter up you do much to maintain apposition of the fragments. In making a diagnosis, all the points mentioned should be considered. Dr. Biddle emphasized a very important point, and that was, that x-rays should be taken. I found in our cases that there were many where the doctor first called measured the leg and found no shortening and did not order an x-ray. The patient had persistent disability and when another physician was called, shortening was found and the x-ray disclosed a fracture of the neck of the femur.

RECURRENCE OF HERNIA*

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PHILADELPHIA

My interest in the recurrence of hernia after operation was aroused by observation of this condition occurring among the members of the police and fire departments of this city. An experience of fourteen years in those bureaus has caused me to be disappointed in the operative results of hernia. Results of herniorrhaphies on these men have not been worse than some other statistics show, but have not been satisfactory. My attention was also directed to the subject because of the fact that during the period of the war and for the two years thereafter our cases of recurrence tripled. The reasons for this, I am convinced, were twofold: first, difficulty in maintaining the proper physical standard for applicants because of man-shortage; second, men were necessarily ordered to active work too soon after operations—a point which will be discussed hereafter.

It must be remembered that the police and firemen are men who do hard, laborious work, with episodes of sudden and violent effort. I make these assertions in spite of the work of those cartoonists, paragraphers, and comedians who would belittle and mimic our guardians of the peace.

STATISTICS

Those of you who may have had the pleasure of hearing Dr. DaCosta lecture during the year will recall an anecdote which he told concerning statistics. It would seem that there was a debate in Parliament on the Indian salt tax. The late Mr. Gladstone sent to the Indian Department for statistics on the subject. His messenger returned with the request from the Department for information as to which side of the subject the Prime Minister wished to advocate. And so it is with surgical statistics. It matters not on which side you wish to speak, statistics can always be found to corroborate or emphasize any statement, the technique of operation, or end results. Not that I mean to decry the value of statistics. Proper statistics are most valuable, but statistics are of no value unless conscientiously and thoroughly compiled. The end results are faulty in that a proper follow-up system is not maintained, and often a surgeon may unconsciously misconstrue or misinterpret statistics to emphasize some pet operation or theory.

The statistics given in surgical books on the subject of recurrence of hernia vary to such an extent that they are misleading and ambiguous, especially to the student. To illustrate: Ashhurst's Surgery,[1] "Recurrence of hernia takes place in very few cases; according to Coley, permanent cures are effected by proper operation in about 95 per cent of cases." There is no mention of recurrence of hernia in Brewer's Surgery, Wyeth's Surgery, nor Park's Surgery. Blake, in Wood's Reference Handbook of Medical Sciences,[2] states that 25 per cent of direct herniae recur. Mumford[3] states that "97 per cent of our cases can be cured by operation" but he does not distinguish between the direct and indirect. In Keen's Surgery[4] a page and a half is devoted to the results of the modern methods of operation for the radical cure of hernia, but no distinction is drawn between results of direct hernia and the indirect. DaCosta[5] quotes Coley's statistics, but draws no distinction between recurrence after the two types of hernia. Rose and Carliss[6] state: "Recurrence after operation is much less than formerly, and statistics go to prove that in the experienced hand less than 10 per cent of these cases recur."

The most important point in these statistics is the failure to differentiate direct hernia from indirect—a distinction which is not sufficiently emphasized to students, especially regarding the prognosis of operation for the two conditions.

The following are among the authoritative statistics on this subject. Your attention is directed toward the variance of results.

In Masson's[7] Statistics of the Mayo Clinic, out of 7,016 cases of hernia there was "less than 1 per cent of recurrence following cord transplantation, and a little more than 1 per cent following the anatomic operation"; but this article also fails to record the number of recurrences which followed operation for direct hernia or for indirect hernia.

Taylor's[8] statistics of operations performed in the Johns Hopkins Hospital from January 1, 1899, to January 1, 1918, for indirect hernia, show out of 2,230 cases, 46 known recurrences, of 816 cases examined or heard from. This is 5.6 per cent of recurrences. In operation for direct hernia, out of 256 cases there were 18.08 per cent of recurrences.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Erdman[9] records 102 operations for oblique hernia, with recurrence in two cases (less than 2 per cent); and seven recurrences in 46 operations for direct hernia, or 15.2 per cent.

Stetten[10] reports 200 cases operated upon by his method, and reports that he has seen no recurrence in the cases which he has been able to follow up. As he includes in the table both direct and indirect hernia, the results are excellent, and speak well for his operation.

Coley[11] reports a total of 8,589 cases, 6,090 of which were operated on at the Hospital for Ruptured and Crippled in New York. Most of them were under 14 years of age. Nineteen hundred and sixty-six were operated on at hospitals other than that for Ruptured and Crippled. Of 4,420 cases of oblique hernia in the male, all ages, there were 25 recurrences or 0.57 per cent. Of 33 direct hernia, male, there were no recurrences. Of 369 indirect hernia in women, there were 13 recurrences, or 3.5 per cent. Of 13 direct hernia in women, one recurred, or 7.7 per cent. It must be noted in the excellent results of Coley that a large per cent were operations on children under 14 years of age. Coley states in the same article: "If the final results of the patients who have been operated upon for direct hernia are carefully followed up for at least a period of two years after operation we believe that fully 10 to 15 per cent will show a distinct recurrence." Druner[12] reports 21.4 per cent of recurrence following the Bassini method of operation. Moschowitz[13] at the New York Hospital reports 6.86 per cent of recurrences. Earl[14] in 38 cases, operated on by the method of placing the cord directly under the skin and superficial fascia, has had no recurrence. Downes[15] states that "In direct hernia the recurrences are anywhere from 10 to 20 per cent." Of 300 cases, in which he transplanted the rectus muscle, from 5 to 10 per cent recurred.

The above statistics have been cited in order to show the very marked difference in the results in the hands of experienced surgeons; i. e., recurrence even in direct hernia varying from 1 per cent to 20 per cent.

Wherein lies the trouble?

Taylor's[16] statistics emphasize an interesting point; that is, of 356 patients examined at Johns Hopkins Hospital for recurrence following operation for inguinal hernia, 8.4 per cent recurred, and of 460 patients heard from by letter, but not examined, 3.4 per cent recurred. The same ratio was found in those who were examined following operation for direct hernia; that is, of those examined at the hospital 29.7 per cent recurred, but of the patients who were heard from, but not examined, only 6.3 per cent recurred. This proves that a patient's opinion concerning recurrence is not accurate.

In the compilation of statistics for the determination of percentage of recurrence it is of paramount importance to divide the direct hernia from the indirect hernia. No table of statistics is of any value, in fact it is misleading, unless this division is made.

What are the causes of recurrence? And what methods can be adopted to reduce the percentage of recurrence?

As Bennett[17] states: "An indirect hernia properly treated should not recur. A direct hernia, no matter how well operated, may recur."

Cases for herniorraphy should be properly selected. The older the patient the greater is the chance for recurrence.

Masson[18] shows that of 330 cases of recurrence, 88 cases, or 25 per cent, were fifty years of age or over, and more than 50 per cent were over 40 years of age. The younger the patient the more readily the tissues heal, and, as a rule, the younger the patient the less dilated are the rings. Coley[19], in his statistics, mentions 24 cases of direct inguinal hernia occurring in adult females and in children under the age of 14 years. It is rare to find a child under the age of 14 years suffering from a direct hernia. Drew[20] has never seen a direct hernia in a child. Masson[21] cites but two cases of direct hernia occurring in children.

It is realized that some are younger than others at 50 years of age, but it is believed that if a truss can be satisfactorily worn, especially if the hernia is a direct one, it is better not to advise operation in those over 50 years of age, unless there is some special indication for operation. There are many surgeons who will criticize this statement.

Patients suffering with hernia should be more thoroughly studied before operation. It should be noted in the history whether the hernia is direct, indirect, or saddlebag; also the condition of the muscles, and especially the strength of the conjoined tendon. Bloodgood[22] emphasizes the fact that recurrence of hernia is in a large part due to the failure of surgeons to grasp the great importance of the conjoined tendon in solid repair. He finds that in 5 per cent of inguinal hernia the conjoined tendon is missing. In the hurry of a busy surgeon's work he may sometimes fail to examine thoroughly his cases of hernia, and such cases are occasionally operated upon without proper examination by the operator before operation.

The rôle the anesthetic plays in the recurrence of hernia is questionable. There are many advocates of local anesthesia for practically all herniorrhaphies. Stetten[23] reports 200 cases operated upon under local anesthesia, with no recurrence. Taylor[24] reported 50 cases of indirect hernia operation under local anesthesia, with six recurrences. Only one case was infected. In 11 operations for direct hernia, performed under local anesthesia, there were two recurrences (18.1 per cent). Four of these cases were infected, two of which recurred. Taylor also states that "The use of local anesthesia slightly increases the rate of recurrence, but does not seem definitely to have affected the healing of the wound."

I am still of the opinion that in many cases of hernia complicated with strangulation, pulmonary complication, pregnancy, etc., local anesthesia is the method of choice. For routine herniorraphies nitrous oxid gas and ether should be used. Operation for strangulation, whether the operation is performed under local or general anesthesia, should not show a higher percentage of recurrence, provided drainage is not necessary, and the wound does not suppurate.

POSITION ON OPERATING TABLE

It has been suggested by Lyle[25] that if a patient's thigh is slightly flexed and rotated internally, the muscles, fascia, and ligaments of the inguinal canal of that side are relaxed, and more satisfactory apposition can be obtained. This posture has been used following herniorraphy, by placing a pillow under the knee of the side operated upon to relax the strain on the sutures, but I have not tried placing the patient in this suggested position during the operation.

OPERATIONS

It is not intended to suggest any new method of operation, nor to review all of the operations now in vogue, but to emphasize a few salient points.

There can be no one operation for hernia, direct, indirect, or recurrent. "The operation should conform to the varying conditions presented by individual cases." (Van Dam.[26])

The operation should be performed by cutting with scalpel and scissors and not by tearing nor stripping with gauze. The same gentleness in handling tissues should be used when a patient is under a general anesthetic as must be used when operating under local anesthesia.

Hemostasis must be absolute, as the greater the oozing the greater the chance of infection. Infection is a favorable cause of recurrence.

The ilio-inguinal and the iliohypogastric nerves must neither be cut nor caught in suture. Moschcovitz[27] has, however, shown that inclusion of the iliohypogastric nerve in a suture is likely to be followed by a neuralgic pain, but division of the nerve is not followed by a local paralysis of the internal oblique muscle, and therefore, has no bearing upon the radical cure.

Regarding the treatment of the sac of indirect hernia, Bennett[28] states that "If the sac has been completely removed and the neck strongly ligated the hernia should never recur." It is believed, however, that one would hardly be willing to treat an indirect hernia only with this disposition of the sac followed by no reconstruction of the canal. In indirect hernia, after freeing and tying the sac, I invaginate it under the transversalis and internal oblique. I have practiced this technique in both unilateral and bilateral hernia, but Erdman[29] points out that when "The neck of the first hernial sac has been transfixed high up and doubly ligated, in operating on the other side it is quite possible that in the effort to close the sac high up, undue traction is exerted across the midline upon the recently ligated first sac and slipping of the ligature may take place." He adds: "This is no mere conjecture of the writer, but is based upon actual experience, and inspection during the simultaneous operations upon bilateral hernia by the operator and an assistant, when it is very easy, especially in direct hernia, for the operator by tugging on his sac, to exert much traction on the opposite sac." In one of his cases, "upon opening the sac on the second side, free blood was seen in the peritoneal cavity, evidently coming from the opposite side, which was, of course, at once reopened, and the ligature found to have slipped from the neck of the sac." I was greatly interested in the report of this case, as I had a similar case at the Orthopedic Hospital just a year ago.

Unless the sac of a direct hernia is large, it is probably better not to open it, but to invaginate it with its covering of preperitoneal fat, and to place a few stitches in the base to prevent pressure on the suture line during healing. This will also obviate the danger of opening into the bladder in this type of hernia (Masson[30]).

Angwin[31] opens the peritoneum above the sac of an indirect hernia by retraction upward of the internal oblique, and transversalis; then places a finger in the sac from within the peritoneal cavity and so dissects the sac entirely free. McClanahan[32] takes exception to tucking the sac under the muscles, but dissects the sac in toto and closes the peritoneum as if it were opened for any laparotomy.

The necessity for excision of the veins of the cord is another disputed question. It would seem that excision of the cord lessens the likelihood of recurrence, but is followed by hydrocele in almost 20 per cent of the cases. There is also distinct danger of atrophy of the testicle of the operated side (Taylor[33]). Many surgeons remove the entire cord and testicle when operating on elderly patients, especially if the hernia is strangulated. I excise the veins only if any degree of varicocele exists, as it is believed that the less one handles the cord the less the postoperative pain, and the less the chance of infection.

Torek[34] separates the vas from the spermatic vessels, and brings the vas through the muscles at a lower level than the vessels. He reports a series of 600 cases with but two recurrences, one of whom had syphilis, and the other case was not operated upon by Torek, but by an assistant.

The transplantation of the cord and the reconstruction of the canal are steps of individual choice. I usually transplant the cord in adults whether the hernia is direct or indirect. It must be remembered that "The reconstruction of the canal is more necessary as a prophylactic measure against the future occurrence of a direct hernia than as a provision against the recurrence of the condition operated upon" (Bennett[35]).

Bloodgood has transplanted the sartorius muscle for the cure of inguinal hernia when Poupart's ligament has been destroyed, and in rare cases of recurrent inguinal hernia.

The importance of the use of the cremaster muscle was pointed out by Brenner[36] in 1898, and by Halstead[37] in 1903. For the approximation of the cremaster, transversalis, and internal oblique to Poupart's ligament some surgeons use interrupted sutures, while others employ a continuous suture. Whichever suture is used care must be taken to tie firmly, but not tightly, as muscle atrophy or tissue necrosis may ensue if sutures are tied too tightly.

Until two years ago, I frequently transplanted the rectus muscle in cases of direct hernia, but at present in the same type of cases, especially those in which the conjoined tendon is obliterated, I transplant the sheath of the rectus and not the muscle. When the muscle is transplanted its normal traction or pull is out of normal alignment. I have observed on more than one occasion that the fibres of the muscle become separated when sutured to the lower end of Poupart's ligament. At a meeting of the Philadelphia Academy of Surgery, held last spring, I presented four cases of femoral hernia following operation for inguinal hernia. It is my opinion that traction on Poupart's ligament, especially if the rectus muscle is transplanted, may enlarge the femoral ring and predispose to femoral hernia. One of these cases reported had been operated by one of the most experienced surgeons in this city in 1911 for right inguinal hernia. Two months after, the hernia recurred. The hernia was operated upon again in 1912, but recurred a year later. In 1916 the same surgeon operated again, but when I examined the patient in 1921 he not only had a recurrence of his inguinal hernia, but also had a femoral hernia on the same side.

Regarding suture material, nearly all surgeons now use absorbable sutures—usually No. 2 chromic for muscle and fascia. A few surgeons still use silk. Bennett[39] darns the opening of the external ring in direct hernia with silk. One would certainly anticipate a high percentage of infection following this procedure.

After completion of the operation it is of paramount importance to apply a firm spica of the groin; a double spica gives better support even though the operation has been confined to one side. This bandage should be applied before the patient is lifted from the table, and should remain in place until the stitches are removed. The scrotum is held in elevation by a strip of adhesive running across the thighs or by a suspensory bandage.

For what length of time should a patient who has been operated upon for hernia remain in bed? It is believed that many recurrences are due to the fact that the patient is allowed out of bed too soon after operation. I keep all adults in bed at least 18 days, and if the herniorrhaphy is bilateral, or if the hernia was large and direct, I keep the patient in bed 21 days. Children may be allowed out of bed in 10 to 12 days. Some surgeons, notably Masson, allow patients out of bed in 8 days. I am not convinced that remaining in bed 15 to 21 days causes muscle weakness or atrophy from disuse.

Recurrence may occur if a man is allowed to resume laborious work too soon after operation. This point is emphasized impressively with the police and firemen. No policeman or fireman is allowed to resume active duty for a period of three months following his operation. Physicians in charge of large industrial plants have demonstrated that a man is more likely to have a recurrence if he is returned to the same character of work after operation as he was assigned to before. If he is given work of such a character as not constantly to use the same muscles or groups of muscle his hernia is less likely to recur.

Should a bandage or belt be ordered for a patient following herniorrhaphy? I do not make it a rule to order a belt if the patient is young, muscular and not inclined to adiposity, but do order a belt for an elderly person or for one who has a large pendulous abdomen. A truss should never be worn following a herniorrhaphy.

CONCLUSIONS

1. To be of value, statistics of end results of herniorrhaphy should divide direct hernia from indirect hernia.

2. The difference in the prognosis of operation for the two conditions should be emphasized to students, practitioners, and especially to the patient.

3. Care must be used in the proper selection of cases for operation.

4. A thorough examination should be made with special reference to the condition of the muscles and conjoined tendon.

5. An operation which suits the individual case should be selected, and no one classic operation relied upon to cure every case.

6. Careful postoperative treatment, to include a period of rest in bed for at least eighteen days after operation, especially after operation for direct hernia.

7. No laborious work for twelve weeks after operation, especially after operation for direct hernia.

8. The patient to report to the surgeon once every six months for a period of two years to ascertain whether or not the hernia has recurred.

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DISCUSSION

Dr. George G. Ross (Philadelphia): The question of hernia is not very new, as hernia was operated two thousand years ago and some of the operators were as radical as Dr. Owen mentioned, in having removed the testicles. I think there is little opportunity for pessimism as to the question of radical cure of inguinal hernia. If you consider the deterrent factors to be dealt with in the cure of inguinal hernia and then take statistics of recurrent hernia, which vary from one-half to twenty per cent, I think you get a fairly good idea of the situation. First of all, you have a congenital anatomical defect to contend with. In the male we have the spermatic cord and in the female the round ligament. As long as you have these two factors making a potential canal you will have recurrence. I believe the indirect inguinal hernias are practically congenital hernias whether of rapid or slow formation.

In addition to the anatomical defect (because you cannot castrate all your patients) you have several other factors to contend with. These are not cases for the occasional operator who is not skilful; you must know your anatomy and technic and be surrounded with proper equipment. What is worst of all, if you turn these cases over to the house doctor and permit him to operate hernias, you will have recurrence. It is a job for the qualified, experienced man and not for the tyro. Often you have patients who come under the classification of "fool," who will not listen to orders. I had an instance of a doctor, a friend of mine, who insisted on getting out of bed on the fourth or fifth day and had a recurrence, blamed me and went to another man for another operation. Another factor is that a certain number of these cases come to you for radical cure of hernia when they have been wearing a truss for an indefinite period. By producing lack of tone, you will get a higher percentage of recurrence in patients who have worn trusses than in those who have not done so. I agree with Dr. Owen as to keeping your patients in bed for a definite time. I keep them in bed for fourteen days for the indirect and eighteen for the direct hernia. Considering the recurrences of indirect hernia at 3 per cent to 5 per cent and the direct from 5 per cent to twenty per cent, and considering the deterrent factors, I feel that the operation is one attended with unusually good results.

There are several points of technic which I have followed out for a number of years. When you go through skin and superficial fascia you will find between the deep layer and the superficial fascia and the aponeurosis of the external oblique muscle where it comes in contact with Poupart's ligament, that there are many minute blood vessels which will bleed if the two surfaces be stripped one from the other. That means you have destroyed a part of the blood supply of the external oblique. The condition of the external oblique is a vital point in the recovery of your patient from hernia. Another thing is the great delicacy that is necessary in dissecting out the cord and sac. It should not be stripped up with gauze, but by a sharp knife and scissors. The spermatic cord is held in the canal by the cremasteric muscle, which goes down in a series of loops almost to the testicle. The testicle is pulled up or let down by the cremaster muscle. If you lift the areolar tissue you can separate fibers longitudinally, and through the opening you can lift up the cord without any necessity for further dissection. Then another point in regard to dissecting the sac away from the cord; The spermatic duct enters the abdominal cavity through the internal ring on the midline side of the internal ring; the veins enter and the spermatic artery has its exit from the cavity on the outer side, and between these two structures on the anterior surface lies the sac. If you will make a longitudinal incision in the long axis of the cord you will separate the areolar tissue and lift it up and dissect it loose with a minimal amount of trauma to the structures. The spermatic veins should be removed only when they are large and varicose. If you tie the sutures through the bellies of the internal oblique and transversalis muscles as hard as you can tie, you will cut right through the belly of the muscles. Remember that in this muscle, like all muscles, the bundles of fibers are held together by loose areolar tissue. The tensile strength of the abdominal muscles is at the minimum, except when in a state of contracture, so I do not think it makes much difference whether you do a Bassini or whether you do not.

Dr. William J. Taylor (Philadelphia): I have very little to say after this very excellent paper by Dr. Owen and also Dr. Ross's statement, but there is one thing that I do think I might say. I do not believe that sufficient time is given after operations upon hernia before these men go back to work. We found this in the army, particularly in the British army where I served, and they found it was true in the Canadian army to such an extent that they returned men to Canada for operation for radical cure of hernia and kept them there for six months. They found that if allowed to go back into the line, or to real hard work, recurrences were very apt to occur. I do believe that in many of these cases, if they could be given some other form of work, whereof Dr. Owen speaks, where they would have muscle exercise a little different in character and position, that we could get better results. No matter what type of operation you may do, the most important thing is to give sufficient time after the operation to allow the muscles to regain their power. I think any man should be away from hard laborious work for at least six months.

Dr. P. G. Skillern, Jr. (Philadelphia): After the very comprehensive paper by Dr. Owen and the masterly discussions of Dr. Taylor and Dr. Ross there seems to be very little left to discuss, and yet there are two points brought up by Dr. Owen with which I am not entirely in accord. The first point is the distinction he emphasizes between the indirect and the direct types of inguinal hernia, for while this distinction may be useful in teaching the surgical anatomy of inguinal hernia, yet if followed dogmatically at the operating table it is liable in certain cases to bring about recurrence of hernia in the following manner: A patient is operated upon for indirect hernia, but comes back to the surgeon a few months or a year later with recurrence. Examination shows, however, that the site of the previous operation is strong and not involved in recurrence, but that the recurrence this time is of the *direct* type. Or, a patient is operated upon for direct hernia and gets a recurrence of the *indirect* type. Had either of these patients been operated upon for *inguinal hernia* regardless of distinction as to type, there might have been no recurrence whatever. In other words, for the purposes of operative surgery, the whole area from the pubic bone and pubic head of the rectus muscle to beyond the internal ring laterally, should be taken as the field to be reconstructed, whether the hernia itself is of the direct or the indirect type; for the peritoneum in this whole area may be so stretched as to form an actual or potential hernial sack, in which case it would be partitioned by the deep epigastric vessels into a "pantaloon" sack, with one "leg" of the pantaloons in the indirect area and the other in the direct area, and unless both the legs be recognized and properly dealt with, recurrence may take place as above described. In this connection I can recall two physicians who had been operated upon elsewhere for indirect inguinal hernia, in both of whom I found at operation recurrence of the direct type. It is my practice, therefore, when dealing with a case of inguinal hernia, to classify it simply as an "inguinal hernia," and to operate upon it in such manner as to reconstruct the entire area from the pubic bone and pubic head of the rectus to just beyond the internal ring. The technic by which I accomplish this will soon appear, with illustrations, in *Surgery, Gynecology and Obstetrics.*

The second point brought up by Dr. Owen with which I am not in accord involves the choice of anesthetic. I do not think that general anesthesia is suitable for these cases, for the tossing about, vomiting and perhaps coughing after general anesthesia in no way contribute to kindly healing of the hernia plastic. The latest 125 cases of inguinal hernia upon which I have operated were all done with local anesthesia, with entire satisfaction and entire absence of postoperative strain upon the wound by the ether sequelae just mentioned, which may be a further cause of recurrence. I have also extended local anesthesia to ventral and femoral hernia.

Another reason for recurrence is the hastily performed operation, especially where closure is done with the continuous suture. As Dr. Ross said in his discussion, this is a complicated technical procedure, and time devoted to getting firm and satisfactory reconstruction is well spent, and one can take more time with local than with general anesthesia. The structures that are to be united in the reconstruction should be thoroughly cleaned of fatty areolar tissue. The innermost upper stitch should fall at the outer border of the triangular fascia and firmly grasp the lower part of the linea semilunaris and pubic head of rectus, to obliterate the weak inner angle. The cord is carried over until it emerges just beyond the internal ring.

Dr. Owen (in closing): It goes without saying that the result of operation in the hands of inexperienced surgeons will not be as satisfactory as in cases operated by experienced surgeons. The experienced surgeon has thorough knowledge of the surgical anatomy of the inguinal region, and performs the operation best suited to the individual case. A herniorrhaphy is not a minor operation and cannot be placed in the hands of a resident physician to perform without careful supervision.

I certainly disagree with Dr. Skillern in his statement concerning direct and indirect hernia. If I have not been able to impress the difference between direct and indirect hernia my paper is of no value. Not only should students be taught the difference in the prognosis of the operation for direct hernia and for indirect hernia, but this difference in prognosis should be explained to practitioners, to the patient's family physician, and to the patient himself. The surgeon should explain to the patient the percentage of recurrence in direct hernia and the percentage of recurrence in indirect hernia. As Dr. Ross has stated, you do not have the difficulty in reconstructing the canal in indirect hernia that you do in direct hernia.

Regarding local anesthesia, there are many indications for a local anesthetic, and there are many surgeons who perform herniorrhaphies practically routinely under a local anesthetic—such men as Dr. Nassau of this city and Dr. James Mitchell of Washington. Personally, I do not believe in using local anesthesia routinely, and use it only when a general anesthetic is contraindicated. The anesthetic of choice I believe to be nitrous oxide gas, and a minimum amount of ether.

SPLENIC ANEMIA*

RALPH L. ENGLE, M.D.

PHILADELPHIA

Osler was the first to describe splenic anemia as a clinical entity, but this condition has been greatly confused with many varieties of splenomegalias, such as those due to syphilis, malaria, hemolytic jaundice, pernicious anemia and pseudoleukemia. It is described by Osler as "an intoxication of unknown nature characterized by great chronicity, a primary progressive enlargement of the spleen which cannot be correlated with any known cause, an anemia of the secondary type with leucopenia, a marked tendency to hemorrhage from the stomach and in many cases a terminal stage with cirrhosis of the liver and jaundice." It is now generally conceded by authorities that this terminal stage is what Banti described in 1883 and later in 1894 to which he gave the name of Banti's disease. In his later communication he describes three stages, the one gradually merging into the other:

1. An enlarged spleen and secondary anemia, the duration of which may last from three to fourteen years.

2. The enlargement of the liver, the duration of which is brief.

3. Atrophic cirrhosis of the liver with ascites, the duration of which is one to two years, invariably terminating fatally, death due to an intercurrent infection, hemorrhage, or autointoxication from the cirrhosis.

Some observers, as Griffin, classify von Jaksch's anemia—pseudoleukemia infantum—as an infantile form of splenic anemia in which the leucocytosis and abnormal marrow cells may be explained by the hemopoietic variability of the infantile blood.

Incidence: Rare under ten years of age. Males somewhat more affected than females.

Etiology and Pathology: The etiology is still obscure. The course of the disease, the primary enlargement of the spleen, anemia, and the fibrosis of the organs suggest a chronic form of intoxication or infection possibly originating in the spleen and causing a secondary cirrhosis of the liver.

The spleen in these cases shows a chronic hyperplasia with generalized fibrosis of the splenic pulp, atrophy of the Malpighian bodies and endophlebitis. It is not grossly different from the fibrotic spleen of other diseases of known origin such as syphilis, malaria, etc. The liver shows some enlargement due to chronic passive congestion except in the terminal stage when there is found an atrophic interlobular cirrhosis. Warthin and Dock have called attention to the importance of a thrombosis of the splenic, portal and mesenteric veins found at autopsy.

Kristjanson, from the Milwaukee County Hospital, reported some experimental work on splenic anemia. In the cases studied, the histological studies confirmed the diagnosis of early splenic anemia. A diphtheroid bacillus almost identical with the diphtheroid bacillus found in frank cases of Hodgkin's disease was obtained. These organisms were used in an attempt to reproduce the disease in animals. In dogs it produced a progressive enlargement of the spleen with increased fibrosis and perisplenitis, with histological changes like those of early Banti's disease. The control animals inoculated with other bacilli remained free. The blood picture of the original cases was of a type of secondary anemia, while the control animals showed a leucocytosis. The experimental animals likewise gave a positive complement fixation, using a bacterial antigen and the sheep's hemolytic system.

Clinical History: The characteristics are:

1. The very chronic course. The symptoms increase progressively without any hope of recovery.

2. Slowly progressive enlargement of the spleen. This appears at first without any other symptom. Later appear—

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

3. Blood changes, characteristic of a secondary anemia with diminished red blood cells, low color index, and either no change in the white blood cells or a leucopenia. The red corpuscles may drop to 2,000,000 per cm. The average in Osler's cases was 3,425,000 with an average Hb. of 47 per cent. Poikilocytosis is rare and nucleated red cells are usually only observed in the late stage.

4. Tendency to hemorrhage is remarkable. Hematemesis is the most frequent form encountered. However, epistaxis, purpura, hematuria and retinal hemorrhages are observed. The amount of blood lost is quite variable.

5. Affection of the liver. In the later stages there develops a cirrhosis of the liver with jaundice.

6. Other phenomena such as attacks of dyspepsia, flatulence and indigestion are observed.

Treatment: The prognosis in splenic anemia is unfavorable without proper treatment. There may be intervals of years in which the patient enjoys a fair degree of health but eventually it leads to a fatal issue.

Splenectomy is the only curative treatment. Radium and x-rays have been unsuccessful. Iron and arsenic are important to lessen the severer grades. Splenectomy should be performed early in the disease before the liver becomes involved or before thrombosis of the splenic vein occurs. Of course it is never advisable to operate following hemorrhage. Early operation means a more certain chance of recovery and quicker convalescence. Danger and difficulties increase with lapse of time. In the early stage the mortality is 10 per cent as compared to 25 per cent in the later stage. Up to September, 1920, in the Mayo Clinic there were 73 splenectomies for splenic anemia with 9 deaths—a mortality of 12.3 per cent.

REPORT OF CASE

The following case was admitted under Prof. E. E. Graham's service at the Jefferson Hospital and subsequently operated upon by Prof. J. C. DaCosta, to both of whom I am greatly indebted for the report of the same. The patient, male, white, nine years old, was admitted to the hospital March 12, 1920, complaining of weakness and an enlarged abdomen.

Family History: The family history is unimportant. Both father and mother are living and well. There are three brothers and one sister living and well.

Personal History: Child was of full term and birth was normal. Child was breast fed. Dentition and general development of the child were normal. Had measles at three years and scarlet fever at four, but no other diseases.

Present Illness: Began three years ago when patient would suffer from attacks of headache, general malaise, slight degree of jaundice. These attacks were called bilious and would last about one week. These have occurred every three to six months. The last of these attacks occurred one week ago, when the attending physician noted a large swollen abdomen. During this last attack patient vomited blood intermittently for three days and stools were tarry. There has been shortness of breath on slight exertion and palpitation of the heart. Never any fainting attacks. Bowels have always been regular and appetite has remained fair.

Physical Examination: Presents a fairly well nourished child, marked pallor of mucous membranes; skin of lemon yellow color. *Eyes*—Pupils equal, react to light and accommodation. Conjunctivae very pale. Eye grounds negative. *Mouth*—Teeth good; mucous membranes pale; tongue clean. *Neck*—Cervical glands not enlarged. Thyroid gland not palpable; normal venous pulsations visible. *Chest*—Flat; expansion good and equal. Percussion note resonant throughout. Breath sound vesicular and clear. *Heart*—Slight precordial bulging. Diffuse cardiac impulse in the third and fourth left interspaces. Apex in fifth interspace 10.5 ccm. to the left of mid sternal line. Presystolic thrill palpable at apex. On auscultation over apex and body of heart there is a soft systolic and rumbling presystolic murmur audible. Pulmonic second accentuated. *Abdomen*—There is general abdominal distention; however especially of the left upper quadrant. Superficial abdominal veins prominent. A large firm mass is felt below the left costal cartilage extending to 1 cm. beyond the umbilicus on the right, extending to the anterior superior spine, and then losing itself under the ribs in the posterior axillary line. This mass, which is the spleen, fills up the entire left side of the abdomen. There is no tenderness and the notch is readily felt. Liver dullness is not increased and there is no ascites.

Laboratory Findings: Blood culture and Wassermann negative. The average blood count prior to operation was as follows: Hemoglobin 50%, erythrocytes, 2,700,000, leucocytes 42,000, color index 0.8, polymorphonuclears 48%, polymorpho-eosinophiles 3%, small lymphocytes 45%, large lymphocytes 4%. Slight poikilocytosis was observed. No nucleated red cells observed. The urine was negative.

X-ray showed the spleen markedly enlarged and free from adhesions. The patient was operated upon April 14, but there developed a serious convalescence. From April 14 to May 16 patient had four serious gastric hemorrhages for which he was transfused. After an extended convalescence patient was discharged from the hospital October 2d much improved.

On May 1, 1921, patient was again observed. He showed remarkable improvement. The lemon yellow color of his skin had disappeared. Skin presented a tanned and ruddy appearance. Mucous membranes still pale. Mother stated there was gradual improvement since being discharged from the hospital. Appetite is good. He still suffers from shortness of breath on slight exertion and from palpitation. Heart examination shows no changes from those noted in his examination.

The following are some of the blood counts taken after operation, at discharge from hospital and one year later:

After Operation

	May 15,'20	*Sept. 28,'20*	*May 1,'21*
Hemoglobin	20%	55%	70%
R. B. C.	2,230,000	3,800,000	3,900,000
W. B. C.	29,200	14,000	10,500
Color Index	0.7%	0.8%	0.9%
Polynuclears	72%	53%	62%
Polynuclear-eosinophiles	1%	0.	1%
Small Lymphocytes	23%	41%	35%
Large Lymphocytes	4%	6%	2%

DISCUSSION

Dr. J. P. Crozer Griffith (Philadelphia): I agree entirely with the writer of the paper, except in the matter of terminology and in the use of the term "splenic anemia" as synomymous with Banti's disease. Splenic anemia at this time of life is a rather vague term, but it certainly covers much more than the latter disease. It has been my experience, and I think that of most pediatrists, that many children have anemia combined with enlargement of the spleen who do not show the symptoms of Banti's disease at all, and who recover finally without any operative procedure. The question in my mind is, whether it would not be wiser to discard entirely the title "splenic anemia," which is a term certainly causing confusion. In fact, the classification of the cases of anemia as they occur in childhood into different types, is one which often meets with great difficulty. The forms seem to shade into each other in a way which does not occur so readily in adults. Thus, for instance, I remember one case quite distinctly which we had in the Hospital of the University of Pennsylvania, in which the symptoms and repeated blood findings corresponded apparently and without doubt to pernicious anemia, but after observation for some months the blood-picture slowly changed to that of leukemia, the spleen increased in size, and the child died of this disease. We had another little patient last winter in which I made the diagnosis of von Jaksch's disease, for want of a better term, although I think that this title, too, is one which is likely to cause confusion. The laboratory examinations, however, seemed to indicate without doubt that the child was suffering from leukemia. In fact there were a few examinations when there were more myelocytes in the blood than any other form of white blood corpuscle. Rapidly, however, this condition changed. We have had the child under observation now for nearly a year. The spleen has grown smaller, and he is distinctly improving. I mention these cases merely to show the difficulty which sometimes arises in the matter of diagnosis of conditions in children in which there is splenic tumor with alteration of the blood-picture.

Dr. Edwin E. Graham (Philadelphia): Splenic anemia is a most interesting disease. It has interested me since 1916, when I wrote my first paper in regard to it. First of all, it is a chronic disease, which gives us a good opportunity of studying it. As Dr. Engle states, it practically divides itself into three stages. The first of those stages ordinarily lasts about five years. During this time the symptoms are mild and the child enjoys fairly good health. During the second stage the child begins to lose a certain amount of health and strength; and in the third stage, usually spoken of as Banti's disease, you have ascites, jaundice and hepatic cirrhosis, and the case rapidly progresses to a fatal termination. The disease runs a more rapid course in the child than it does in the adult, and the prognosis is really very little influenced by medicine. Your iron, arsenic and x-ray will promote a certain amount of temporary improvement. I think all those who have studied the disease agree that medical treatment is practically hopeless.

That brings us to the fact that the early recognition of the disease is most important, and that we have in surgery a very fair prospect of saving the child's life. However, the results of surgery depend practically altogether upon when the operation is done. The cases which Dr. Engle has quoted (and I have followed this subject very carefully myself) I think prove conclusively that if the child is operated on early in the disease the mortality will not exceed 10 per cent. Even if the child is operated on when there is only a little ascites and moderate hepatic cirrhosis with jaundice, as in the case Dr. Engle reported, the result, while questionable and perhaps problematical, is very often satisfactory. If, however, the disease is neglected until Banti's syndrome becomes well established—ascites, jaundice and hepatic cirrhosis—then instead of having a mortality of 10 per cent you have a mortality of about 50 per cent. The reports of splenectomy, as performed by various operators, and especially the work done at the Mayo Clinic, are well worthy of study by anyone who wishes to inform himself as to the advisability and results of the operation. Many cases are on record of children being alive and in good health five years or more after the operation.

I think it is important for us to appreciate that there is a stage where it is inadvisable to operate. When the hemoglobin is below 30 per cent and the red cells below 2,000,000, I think you do more harm than good in operating. Many children at this period in the disease succumb to the operation; so, while I feel that splenic anemia is a disease that we should all study very carefully, I do feel that in the prognosis of it, especially, we should exercise a great deal of care. There is considerable evidence to show that blood transfusion, if done before the splenectomy, is of benefit.

POSTDIPHTHERITIC PARALYSIS*

THEODORE J. ELTERICH, M.D.
PITTSBURGH

Eliminating fatal cases due to a mechanical obstruction by the diphtheritic membrane in untreated cases of laryngeal diphtheria, the majority of all deaths in diphtheria at the present time are caused by paralysis. It is, therefore, the one complication or sequela in particular which is to be dreaded the most.

This paralysis is essentially a multiple neuritis, and according to Rolleston occurs in about 20.7% of cases. It may occur as early as the second day of the disease, but as a rule the symptoms do not appear until the third or fourth week, and sometimes even later. It is seen most frequently following a severe pharyngeal diphtheria in which antitoxin has been given late or in insufficient doses, also when patients have either refused or have not received a sufficient amount of food. Paralysis may follow mild cases of diphtheria. A "sore throat" is often overlooked by the parents and sometimes disregarded by the physician until the more obvious symptoms make their appearance later. The antitoxin treatment of diphtheria does not prevent paralysis, but it has been demonstrated that the earlier the administration of the serum, the less likelihood is there of the occurrence of this sequela.

There are two clinical types of postdiphtheritic paralysis. In the one type death takes place suddenly and without warning. In the other, there is a gradual involvement of various groups of muscles and death usually results from a diaphragmatic paralysis.

Illustrative of the first type is the following case:

A child, two and one-half years old, had been ill with laryngeal diphtheria for two days. She had been injected with antitoxin and was not seriously ill. After taking the temperature, the nurse permitted the patient to sit up and left the bedside. When she returned a few moments later, the patient had fallen over and was dead.

Holt is of the opinion that the cause of death in cases of the above nature is a myocarditis rather than paralysis.

The clinical picture presented by the second type of cases is most aptly illustrated by the following case:

Chas. K., aged 8 years, was seen in consultation with Drs. Guffy and Kelly of McKeesport, Pa., on February 18th of this year. The history previous to the present illness is unimportant. On January 10th, he became very ill with "sore throat" and considerable enlargement of the cervical glands. Two days later a diagnosis of diphtheria was made and forty thousand antitoxin units were administered. He took very little nourishment and vomited a great deal, but at the end of a week was considered convalescent. On January 19th, an impediment of speech with nasal intonation of the voice was noticed, also regurgitation of fluids through the nose. This condition was evidently not considered alarming, for on February 6th he was walking about. On the following day considerable weakness of the legs developed. He could not walk, nor was he able to feed himself. On February 17th he awakened from a nap, vomited and complained of severe abdominal pain. His pulse became rapid. On the following day his condition became exceedingly alarming and I was summoned in consultation late in the evening.

The clinical picture which he presented at my first examination on the thirty-ninth day of the disease was as follows: The patient was fairly well nourished, was pale, and had a most anxious expression of the face. His attention seemed to be entirely centered upon his respiration, which was rapid, shallow, irregular and entirely thoracic. His pulse was rapid, sometimes reaching 160 to 180 per minute. At times it became irregular and intermittent. The pupils were dilated and he had complete aphonia. He swallowed with difficulty and vomited all his food. The temperature was 100° F. There were paralyses of the muscles of both the upper and lower extremities, and he was unable to raise his head. The patellar reflex on both sides was absent. Examination of lungs found negative. The heart sounds were somewhat muffled. The urine was reported as containing no albumin or casts. It seemed quite evident that the patient would die within a few hours.

In addition to alcohol, camphor, caffein and other cardiac stimulants, which he was receiving, gr. 1/20 strychnin nitrate was ordered to be given hypodermically every two hours. Under this treatment the patient improved, but on the second day following had a serious relapse of vomiting. Lavage was done and all other medication withheld except the strychnin and alcohol. *This treatment was followed for the next ten days, during which the patient received a total of six grains of strychnin nitrate.* He improved after the first or second dose, and at no time did he have any twitching of the muscles. After the tenth day the amount of strychnin was gradually reduced but continued until complete recovery had taken place. He was kept in the recumbent posture for eight weeks, then gradually allowed to raise himself, get out of bed and walk. His diet consisted of meat juice, milk and eggs pushed to the highest point of tolerance.

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On September 3, 1921, he was seen last. He had gained considerably in weight. Pulse, 80; respiration, 22. Runs and plays without exertion but has a slight incoördination of the muscles of the right leg. Patellar reflex normal on left side but slightly impaired on right side. Heart sounds perfectly clear and distinct and heart's action regular. Examination of urine negative.

Prognosis: In postdiphtheritic paralysis involving the heart and respiratory muscles the prognosis is exceedingly bad. Rolleston reports eight deaths in thirty-three cases. Mixsell and Giddings regard this percentage as too favorable and place the mortality at 100%. My own experience, in postdiphtheritic paralysis in the type described above, corresponds very closely with that of Mixsell and Giddings. Besides the case cited, I have seen one other patient recover.

Treatment: Every patient suffering from diphtheria and presenting any symptom of paralysis, however mild, must be kept in the recumbent posture from four to six weeks. The patient should be given as high a protein diet as he can tolerate with a moderate amount of alcohol. This holds true also during the active stage of the disease. In so far as medication is concerned in the treatment of postdiphtheritic paralysis, strychnin seems to be the drug in particular which is given the most favorable consideration by most practitioners. The usual dose for a child of eight years is 1/60 grain three times daily. I am firmly convinced that strychnin has not been given in sufficiently large doses to affect this very fatal form of diaphragmatic paralysis.

A cursory review regarding the use of strychnin in postdiphtheritic paralysis in the opinion of the most prominent authors on pedratrics is as follows:

Griffith: "In any form of paralysis the free use of strychnin combined with abundant nourishment."

Holt: "In respiratory paralysis the general reliance is upon strychnin used hypodermically in full doses."

Koplik: "Hypodermic injections of strychnin are of questionable value."

Kerley: "One one-hundredth of a grain at three-hour intervals."

Fischer: "Strychnin one one-hundredth of a grain for a child one year old repeated three or four times daily may be given. The dose can be gradually and cautiously increased until a systemic effect is noticeable. Children will tolerate very large doses of strychnin just as they will tolerate large doses of whiskey."

Mixsell and *Giddings* in their series of cases of postdiphtheritic paralysis gave from 1/15 to 1/60 gr. three times daily.

It seems quite probable that the dosage of strychnin in the case cited is the largest which has ever been attempted in postdiphtheritic paralysis.

Conclusions: Recovery is possible in postdiphtheritic diaphragmatic paralysis. Strychnin seems to be the best remedy in the treatment of this condition. Heretofore it has never been given in sufficiently large doses to save the patient. It may be given in toxic doses without producing any untoward symptoms.

A high protein diet may prevent and will assist in the cure of patients suffering from postdiphtheritic paralysis.

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DISCUSSION

Dr. J. P. Crozer Griffith (Philadelphia): Dr. Elterich is certainly to be congratulated, both on his courage and on his success. It took courage to give such large doses of strychnin, but the success obtained unquestionably justified the treatment. It is well known that the prognosis in these cases with involvement of the diaphragm is usually bad.

The first case in Dr. Elterich's paper is an illustration of early cardiac paralysis. It is most frequently seen in the severe cases, but that it can occur in mild cases as well is shown by the instance now reported. In this form of paralysis the patient dies early in the disease, usually very suddenly. Then there is a second form of cardiac paralysis which, unfortunately, probably every physician has seen more than once. I refer to the condition in which the patient has been doing very well, the fever has disappeared, the membrane has almost or entirely left the throat, and everyone feels assured of final convalescence. Then, perhaps without any other distinct alteration of the condition, the pulse becomes very arrhythmic, and one knows then that there is trouble ahead. I recall, for instance, a case of a little boy, seen with another physician a few years ago. I was called in entirely on account of the cardiac irregularity. The child looked well, and in response to questions said he felt "fine"; but *we* knew that he was dangerously ill, and within two days he had died. There is surely no other condition so disappointing as this later cardiac paralysis, which comes on after convalescence seems to have been established.

Now, inasmuch as palatal paralysis, which is the first form of undoubted diphtheritic neuritis, comes on later in the course, i. e., in the second or third week, it has always seemed to me that these two forms of cardiac involvement to which I have referred really depend upon a myocardial degeneration rather than on a neuritis. Of course it is perfectly possible that the nervous supply of the heart or the cardiac ganglia may be involved as well. It has been shown by experimentation that the toxin of diphtheria very early attaches itself to the tissue cells, and that the attachment can hardly be broken up once it has occurred. It is at least conceivable, then, that the involvement of the muscle cells of the heart occurs early and shows itself at a certain time, and that coincidently with this involvement the cells of the nervous tissue also become involved, but that it takes longer for the evil effects to develop. Certainly, if postdiphtheritic neuritis depends upon the presence of the diphtheria toxin in the blood, then this early involvement must have taken place, because the toxin has been neutralized by the time recovery from the attack of diphtheria begins. It has also, however, been shown that there is no exact relationship between the toxin content of the blood and the development of paralysis. That is to say, that which kills the patient in the ordinary fatal cases is not that which in other cases produces paralysis. Thus it has been claimed that mild cases are just as liable to show postdiphtheritic paralysis as the severe ones. There is, however, some question about this. It seems more likely that many severe cases, if they had survived, would have exhibited paralysis finally. However this may be, one thing certainly is evident, and that is, that the earlier we can get a full dose of antitoxin into the patient, the greater are our chances of preventing evil symptoms of any kind, including the development of diphtheritic paralysis.

Dr. Elterich (in closing): There is one thing which is absolutely true in all these cases of postdiphtheritic paralysis, and that is that there is nothing to be lost but everything to be gained. If we consider that we are dealing with an extensive multiple neuritis, it stands to reason that whatever remedy we may use must be given in sufficiently large doses in order to be efficacious. It is my opinion that it would be almost impossible to give a lethal dose of strychnin to a patient suffering from postdiphtheritic diaphragmatic paralysis.

Again, I wish to emphasize the value of a high protein diet. It is my experience, when a diphtheria patient takes nourishment in large quantities—meat juice, milk and eggs—the much-dreaded postdiphtheritic paralysis does not take place. On the other hand, when patients steadfastly refuse to take nourishment in any shape or form, paralysis is more apt to follow than in other cases.

LOCAL RESPONSIBILITY FOR COMMUNITY WELFARE WITH SPECIAL REFERENCE TO TUBERCULOSIS*

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It is not as easy to present this subject, eliminating what appear important details, as I anticipated when going on the program for this meeting. It is, however, of great importance that this matter should be brought to the attention of all physicians in Pennsylvania, and particularly to those whose influence helps to mould public opinion in their communities.

You are no doubt aware that all other states in the Union, with the exception of Pennsylvania, look to local communities to promote and maintain their own public health and welfare with the State Department of Health lending a helping hand, but with its function largely confined to supervisory work—so-called consultant public health work. This principal of local enterprise, or local autonomy has proved its worth and is considered both in theory and practice to produce the broadest and most effective results.

Coming to the question of tuberculosis, it has resulted in the supplying of many more beds for the tuberculous sick of those commonwealths where it is well advanced, than we have here in Pennsylvania, though we started the official fight on tuberculosis in a centralized way perhaps a decade before these other states had really gotten started. This period was spent by them in educational propaganda, in stimulating and preparing local communities to recognize their responsibility and to act upon it. The example of Pennsylvania was not followed elsewhere, in spite of its many good features. Perhaps the reason which originally justified the inauguration of our centralized system was to be found in the fact that local communities in Pennsylvania were not awake to the extent of the tuberculosis problem, nor to their own needs. In other words, the system of local responsibility requires a good deal of educational propaganda and it seemed, no doubt, quicker and more economical, and even more effective, for this state to lay down large state sanatoria and place numerous clinics in local communities and do it at once, by fiat, so to speak. But has further experience fully justified this course and shown that it is fully adequate? In certain respects we may say that it has, but it has however shown us more: it has shown that the assuming of this responsibility by the state has retarded the campaign for local responsibility and it has further conclusively shown that the problem of handling the tuberculous sick was more extensive and expensive than originally thought, and that it cannot now, and never can in the future, be adequately handled in this centralized way.

We have at the present time come to the turning point, and in this connection there are three propositions requiring immediate consideration and action.

(1) The state has provided as many free beds as it possibly can, or will (about 2,000 in round figures, more than any other state-controlled beds in the Union), but in spite of this there remain literally thousands of cases, particularly advanced cases, unable to gain admission to these sanatoria. Consequently we are not adequately controlling the spread of tuberculosis, which is

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†Chief of Division of Tuberculosis, Pennsylvania State Department of Health.

clearly preventable and clearly curable, given the facilities for segregating and treating these cases. Our waiting list for admission to the three state sanatoria has in the past been so long as to defeat the full usefulness of these sanatoria. Thus it has not been possible to keep the population of these sanatoria, on account of the advanced condition of many cases, moving sufficiently fast to serve their most useful purpose.

What is the answer? We must take a leaf from the demonstration of our neighbors, we must call on the local units, in this case the counties, to assume part of the responsibility, at least to take care of their own advanced sick. We must call upon the counties to recognize their imperative need and imperative duty. The response made by a fairly large number of counties through the recent act authorizing them to build county hospitals or sanatoria, shows that they are fully alive to the situation and recognize that they must act if they are to serve their own people. Local communities must act if the crusade is really to advance, if it is not just to drag along.

It is necessary to point out that these institutions should be situated in or near centers of population, as accessible as possible; and should be able to take patients from neighboring counties which are financially unable to build or have not enough cases to justify their building, on the basis of the neighboring county paying a per diem per capita charge. This is all possible under the act referred to, which is very broadly drawn.

(2) General hospitals should set aside special wards for cases of tuberculosis. This would go far toward helping the situation, particularly in the larger cities. This is imperatively called for. So far, however, there is little progress along these lines, nor do I think it is the entire answer. We need local county institutions in the larger and more populous counties where there are many deaths from tuberculosis yearly; and relatively speaking, few general hospitals are equipped to set aside wards for this special purpose.

(3) Turning to the state dispensary system, this local responsibility is again involved and evident. The idea of a State Department of Health initiating and maintaining entirely a local institution, run for local welfare, under local administration, is foreign to our American ideals, and so far as I know this is done nowhere else. This system, however, has been started and in operation for a long time and we may now estimate its strength and its weakness. It calls for great expense to the State Department of Health, whose duties in other relations are manifold, far-reaching and very broad, and an expense which recent appropriations, and probably future ones, will not justify and cannot carry. The tuberculosis problem cannot be adequately handled in this way.

It seems eminently proper that local communities should be called upon to bear at least a share of the expense of these clinics and that the proper response is in providing free and suitable quarters for them. What we may look upon as these legitimate overhead charges, namely: rent, heat, light, and janitor service, are in each instance much less, usually one to six or one to ten, than the expense the State Department of Health is willing to and does bear in paying its doctors, nurses, and clerks, and in furnishing supplies. The Department sees the reason for this, though again it is done in no other state, in order to help maintain these clinics and make them permanent; to maintain an efficient and uniform standard so far as possible; to give them the prestige, so to speak, of official backing; and to link up through them the tuberculous sick of local communities with the state sanatoria. The system, with certain limitations, is a good one, but the idea of asking local communities to share in maintaining these clinics is clearly a proper one. This view, relatively recently promulgated by the Commissioner of Health, has been accepted by local communities very widely, and in most cases with a hearty and generous response, which reflects high civic pride and an appreciation of the service of these clinics to the community. Out of ninety-odd dispensaries the state is at present paying rent in only about fourteen places, where a year ago it was paying rent in fifty or more places. This part ownership further stimulates the interest of the community, whether it assumes this responsibility through the contributions of voluntary organizations or through its municipal or county government, as has been variously the case.

Further, this dispensary system must be extended, for there are many communities clamoring for a state clinic who offer free quarters. Unfortunately, it is impossible yet to tell whether we can proceed until we see how our reduced appropriation covers existing expenses. This will take another month or two. But could the Tuberculosis Division afford to pay all overhead charges, as in past years, personally I would not recommend the continuance of this system to the Commissioner of Health, because I feel so strongly concerning this principal of local responsibility, and would prefer to use surplus funds to open more clinics on the existing basis of the Department paying nurses, clerks, and doctors, the latter of whom equally with the former should, in my judgment, be paid for their services.

In conclusion, therefore, there are three features in the campaign against tuberculosis in so far as this concerns the care of the individual sick, all depending on this fundamental idea of community responsibility, which I should like to leave with you.

1. Let local communities provide for their own advanced cases and let us keep the state sanatoria for the earlier, curable types and for children. Herein lies their greatest possibility for widest usefulness.

2. Let our fine general hospitals open a ward to advanced tuberculous cases, not one or two hospitals, but all of them. Let public opinion demand this. A special ward for these cases cannot endanger others in the hospital in the remotest degree.

3. Let each community where there is a so-called state clinic, and where new clinics may be opened in the future, feel that this is part and parcel of its own community concern and welfare; its own concern for promoting the usefulness of the clinic by increased use of it, its own concern for its share of maintenance.

While the Division of Tuberculosis and its large personnel can and should urge these views, this great propaganda must be, and incidentally is being, effectively helped forward by the Pennsylvania Antituberculosis Society and by its affiliated bodies throughout the state. The Red Cross and local civic bodies, like Chambers of Commerce, Rotary and Kiwanis Clubs, should also get back of it, and are getting back of it. Prominent men and women everywhere interested in and alive to the importance of public health are getting back of it. It is too big a problem for any one group to push alone, but by this combination, all working toward the same end it can be done. That is, we can get in Pennsylvania enough beds and enough tuberculosis dispensaries, with their medical and nursing complement, adequately to handle the tuberculous sick of the commonwealth—if everybody puts a shoulder to the wheel.

DISCUSSION

DR. CHARLES H. MINER (Wilkes-Barre): It is a great pleasure to be able to testify to Dr. Francine's assistance in getting the coöperation of the people of Wilkes-Barre, my home town, to help maintain and pay the expenses of the local clinic. I believe that the policy of Pennsylvania was a very good one in originating the plan of having the state establish clinics in all the counties of the state, and also of establishing large sanatoria. But I feel the time is surely coming now for the communities to do their part in paying part of the expenses of the dispensaries. In Wilkes-Barre, through the efforts of Dr. Francine and the members of the staff of the dispensary, we secured a very generous appropriation from the city council. Also part of the expense was taken care of by the local tuberculosis societies. Now I believe that is the correct policy, for the community to help out the maintenance of the clinics; but more important than the maintenance of the dispensaries will be the campaign for county hospitals. It is the policy of the department to cut down the number of beds available, and it is necessary for the counties to establish these hospitals. We hope in Luzerne County to secure a favorable vote and to demand of the county commissioners the construction of a tuberculosis hospital.

DR. JAMES M. ANDERS (Philadelphia): I did not expect to discuss Dr. Francine's paper, but this is a subject in which I am intensely interested. I heartily endorse the position taken by the reader of the paper, and feel strongly that local communities should provide hospitals for the advanced cases. The Pennsylvania Tuberculosis Society has had this problem under consideration for a number of years and has recently formulated plans which it proposes to carry throughout the state with a view to creating sufficient sentiment in the various counties to lead them to erect hospitals for this purpose. Indeed, at the forthcoming general election the question will be voted on in no less than seven or eight counties, including Delaware, Berks, Luzerne, Montgomery, and others. It is high time that these advanced cases are properly cared for. I hold that unless this effort is successful we cannot hope for much progress in diminishing the prevalence of this dread affection. The advanced case is a real menace to the family as well as to the community. Of this fact there can be no doubt, and it does not require a great deal of argument to convince the public that this is true. I am hoping that in all counties in which this question is about to be submitted to the people, it will be, as Dr. Miner said, carried.

In my opinion our general hospitals should open a ward or section for these advanced cases. The state cannot care for all of them, and unless each county in the state has its hospital for this purpose we should, we *must*, in the meantime endeavor to have wards or sections of hospitals open for this class of tuberculous cases. There is not the slightest danger of spreading the infection, as Dr. Francine has just said, where proper precautions are taken. The great work so far as the medical profession is concerned, so far as this Society and the various county medical societies of the state are concerned, it seems to me is to stimulate interest among the people in the local communities in favor of this movement. The Pennsylvania Tuberculosis Society endeavors to enlist the sympathetic coöperation of all other civic organizations in this work. It also stands ready to assist the various state tuberculosis clinics to the extent of its ability. It feels that this is a part of its duty, just as it is a part of the duty of other civic or local organizations.

I think one of the most important things that we are endeavoring to bring about is to attach to each local branch or tuberculosis committee and state clinic a social service worker, among whose duties is that of visiting the families from whence these patients come, bringing those families to the state clinics for observation. She is expected to report not only to those in charge of the tuberculosis clinic, but also to the Pennsylvania Tuberculosis Society. All along these lines there is a very large and important work to do, and I quite agree with Dr. Francine that it is entirely too much for the state to carry it alone. The more the state does for local communities the less the people themselves are inclined to do, and it is for us to stimulate the interest of the people. Once they get their interest aroused the results we so earnestly desire will easily follow.

Dr. Edward Martin (Harrisburg): The policies outlined in this paper are those of the Department of Health. Under Colonel Francine, the Division of Tuberculosis has doubled its influence; cut its expenses in half; has established those cordial and understanding relations with the Pennsylvania Antituberculosis Society and all other organizations working for a better public health, which lead to most fruitful results; and has caused to be widely accepted the belief that all sanitary activities bear directly on the tuberculosis problem.

In the multiple activities of the Health Department, there has been no weakening in the direct campaign against tuberculosis.

ACUTE TUBERCULOSIS: AN ANALYSIS OF 100 CASES FROM THE PENNSYLVANIA HOSPITAL AND THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA*

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PHILADELPHIA

The problem of tuberculous processes running an acute course constantly demands the attention of the internist and frequently that of the general practitioner. Many cases of acute tuberculosis are obscure for days or weeks while the physician makes provisional diagnoses of other conditions which the varying clinical picture of acute tuberculosis is prone to suggest.

We have ventured, therefore, to present certain statistics and conclusions which we have derived from a study of 100 selected cases of acute tuberculosis which have been treated during the past twenty years at the Pennsylvania Hospital and the Hospital of the University of Pennsylvania. We have attempted to analyze these cases, especially from the standpoint of diagnosis with as far as possible a correlation of ante- and postmortem findings.

Of the total number of 100 cases selected for analysis, 82 were diagnosed by postmortem, recovery of the organism, or by x-ray showing miliary tubercles of the lungs. The 18 remaining cases were clinically typical with spinal fluid mononucleosis, etc. The proportionate list is as follows:

Postmortem examinations	40	cases
Tubercle bacilli recovered from spinal fluid	34	"
Tubercle bacilli from sputum in clin. typical cases	6	"
Miliary tubercles of lungs seen in x-ray plates	2	"
Clinically typical, with spinal fld. mononucleosis, etc.	18	"
Total	100	"

In seventy cases of our series meningeal symptoms predominated. In the remaining thirty the picture clinically was more like that described in the textbooks as general miliary tuberculosis.

Our series reflects fairly well the relative frequency of the two clinical types among the total cases in the records of the two hospitals; about the proportion of 7 to 3. In connection with frequency of occurrence of the various forms of tuberculosis, it may be interesting to refer to the Johns Hopkins Hospital statistics. Covering a period of 18 years there were 60 cases of acute tuberculosis among 1,440 cases of tuberculosis of all types. (Osler-McCrea System, Vol. 1, page 418.)

Tuberculous meningitis in most instances is a general miliary infection. Eighty per cent of the cases of tuberculous meningitis autopsied in our series had general miliary lesions throughout the body as well as in the meninges. In 90% of these cases a tuberculous lesion of some variety was found elsewhere than the meninges. A conception of the disease tuberculous meningitis as a localized meningeal condition would therefore, in the great majority of cases be wrong.

Age

First	decade,	10 years or under	23	cases
Second	"	10-20	17	"
Third	"	20-30	34	"
Fourth	"	30-40	12	"
Fifth	"	40-50	12	"
Sixth	"	50-60	2	"
			100	"

The average duration of disease of all types from history of onset to death was 36.5 days. The cases included 63 males and 37 females. Sixteen nationalities were represented.

Admission Diagnosis was noted in 45 cases of the series. The results of study of this point are interesting, as showing the general appearance of the patient and conclusions drawn from a superficial examination without laboratory data to aid towards diagnosis. This diagnosis was more often wrong than right. It was approximately correct in 47% of the cases. In the remaining 53% typhoid fever was the most frequent wrong diagnosis. This diagnosis, typhoid fever, was made in about one-third of the cases (29%). Eighteen per cent of the cases were diagnosed acute lobar pneumonia. All of these were of the general miliary type. The remaining wrong diagnoses included uremia, malaria, cirrhosis of liver, spondylitis, and septicemia.

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Ward and Final Diagnosis: A consideration of diagnoses made in the hospital wards showed a delay of the correct diagnosis of acute tuberculosis for a considerable period in about one-fourth of the cases. It was not possible to determine exactly how many cases escaped diagnosis entirely but in a considerable number of cases the correct diagnosis was undetermined until postmortem.

Wrong diagnoses included typhoid fever, pneumonia, cerebrospinal syphilis, uremia, brain tumor, hepatic cirrhosis, and cerebrospinal meningitis. Typhoid fever led the list of wrong diagnoses. The Widal test was performed forty-three times. Three of the Widal tests were positive. One was a mistaken reading. The second was done upon serum of a patient who had had typhoid fever two years previously. The third was unexplained. False Widal reactions, therefore, do not seem to be especially prevalent in acute tuberculosis. In seven patients the test was done repeatedly. A number of cases were treated for long periods by general typhoid technique and sponging. Three cases were operated under the mistaken diagnosis of brain tumor. The cases suspected to be brain tumor usually ran a normal temperature. A number of cases were bled and sweated after a diagnosis of uremia. Several cases were treated actively with antimeningococcus serum. All the cases with spinal fluid polymorphonucleosis received this treatment. A number of cases received active antisyphilitic treatment after being diagnosed syphilis of the central nervous system. These cases usually ran a normal or subnormal temperature.

It has appeared remarkable how often the meningitic form of acute tuberculosis has been suspected of being typhoid fever. In the general miliary type where the diagnosis must often be reached by exclusion, this preliminary diagnosis is to be expected in many cases, but signs of meningeal irritation sufficient to indicate spinal puncture are usually so obvious that the results of study have appeared somewhat surprising. In cases of suspected typhoid, acute tuberculosis should be kept in mind and special search made for meningeal signs.

The discovery of a tuberculous lesion as a possible focus of dissemination was apparently a very valuable aid in differential diagnosis in many cases. More than one-third of the patients complained of some pulmonary symptom, and in more than one-half (actually 57%) an abnormal physical sign of some sort was found in the lungs.

Miliary tubercles themselves may give no abnormal signs to indicate their presence. Three patients who showed postmortem numerous miliary tubercles of lungs had had no abnormal pulmonary signs whatever before death, not even râles to indicate the presence of a lesion. In any event the detection of miliary tubercles by physical signs is difficult. Even when the x-ray has shown their presence and the clinician is sure of the lesion, physical signs may be impossible to elicit. The physical signs are usually those of the old tuberculous focus, the site of dissemination. Those signs which might be attributed to the miliary lesion which were recorded most often were pulmonary hyperresonance, râles and short pleural frictions.

On postmortem examination the frequency of chest tuberculosis in acute tuberculosis was evident. In 90% of the cases autopsied an active tuberculous lesion of some sort was found in the chest viscera. The pleura was involved in 58% and the lungs in 80% of these cases. Hence careful clinical search for a tuberculous focus should be of great value as a point in differential diagnosis.

It is an interesting fact that approximately one-third of the patients with meningitis did not stress headache as their chief complaint. These were the cases most often suspected to be typhoid. Their history was usually that of malaise, mild headaches, loss of appetite, prostration, fever, and in some cases diarrhea. In nine cases there was a history of nose bleed.

Convulsions occurred in 12% of all cases. There was a history of vomiting in 40%. A history of night sweats was often of value. This occurred in 14% of the cases.

Comparatively few patients complained of abdominal pain. One might expect it to occur more often than it does, considering the frequency with which the abdominal viscera are studded with tubercles in acute tuberculosis. Only six patients of the total of 100 had abdominal pain. Yet on postmortem examination 80% of those autopsied had tuberculous involvement of some abdominal viscera. Abdominal pain is more frequent in typhoid fever than in acute tuberculosis (Osler—Principles and Pract. of Med., 8th ed., p. 14). One-fourth of the cases autopsied had ulcers of the intestines; most frequently they occurred in the ilium, but also in the jejeunum, colon, and cecum. None of these patients complained especially of abdominal pain. Three had rather marked vomiting and one had nose bleed. The frequency of occurrence of ulceration of the intestines in acute tuberculosis, suggests that examination of the feces for tubercle bacilli should be done more frequently in suspected cases.

The spleen in this series was very rarely palpable. Notes on this point were made in practically all cases and in only three was it enlarged sufficiently to be felt. This we believe is important as a point in differentiation from typhoid fever. Osler (Prin. & Pract. of Med., 8th ed., p. 26) states that the spleen was palpable in 71.6% of his cases of typhoid. Brown (Osler-McCrea, Vol. 3, p. 305) makes the statement that the spleen is usually enlarged in acute tuberculosis. He quotes no statistics. This was not the case in our series. The infrequency of enlargement of the spleen was borne out in the postmortem examinations, where by weight the spleen was found distinctly enlarged only once and that was in an Italian patient. In two other patients it was slightly enlarged. The difference between 3 or 4 per cent and 71.6% is obvious.

Lymphatic response was also infrequent. A general adenopathy was present in five cases. One of these had a positive Wassermann.

Stiffness of the neck was apparently more reliable as a sign of meningeal irritation than Kernig's sign. It was often definitely present when Kernig's sign was doubtfully positive or negative. About one-fourth of the total number of meningitic cases gave a negative Kernig's sign on admission to hospital.

Positive retinal lesions were found in 8 cases, of forty examined by the ophthalmoscope. These embraced low-grade neuroretinitis, swelling of disc, beginning optic atrophy, and hemorrhagic retinitis. In no case was a miliary tubercle of the choroid coat found.

The question often arises at the bedside as to the character of the temperature curve most frequently present in acute tuberculosis. We have attempted to analyze this point. The cases could be divided into three groups: 1, typhoid-like, 48 cases; 2, irregular, 39 cases; 3, normal or subnormal, 7 cases. The irregularity of the temperature curve has been stressed in certain textbooks. We find that a constantly elevated typhoid-like temperature cure is equally as common. Seven patients ran a prolonged normal or subnormal temperature curve, the fact that there was no fever suggesting other diagnoses as being more likely than tuberculous infection. One patient in this group never had a temperature above 98.2 during his entire stay of eighteen days in the hospital. There was no rise before death. This case was one of the general miliary type. Two of the seven cases escaped diagnosis entirely until postmortem, and the diagnosis was considerably delayed in most of the others.

We feel that the x-ray as an aid to diagnosis was not taken advantage of as frequently as it should have been. The great majority of cases were not x-rayed. The diagnosis was established by this means in only two cases. Miliary tubercles can often be seen quite early in plates of the lungs in acute tuberculosis. By the use of the bedside unit and careful handling the picture can be taken without much disturbance of the patient.

The Von Pirquet test was done on eleven patients. Ten were negative and one was positive. This is in keeping with the observations of others, that patients acutely toxic with an overwhelming amount of the T. B. virus do not react to V. P. The injection of 5 milligrams of old tuberculin subcutaneously in one patient resulted in the sudden death of the patient.

Leucocytosis was more than twice as common as a normal or subnormal count. This was based on 128 counts. A leucopoenia (below 5,000) was present in only five of the 128 counts. Leucopoenia is far more frequent in typhoid fever. Leucocytosis is present also far more frequently in acute tuberculosis than in typhoid fever.

The spinal fluid in three patients out of seventy (about 4%) showed pus cells instead of the usual mononuclear increase. There was no apparent explanation for this. These cases were always misleading. Tubercle bacilli were found in about one-half the spinal fluids examined. The total cell count of spinal fluid varied from 16 to 720 per cu. mm. In only two cases was the spinal fluid described as more than clear to slightly turbid in appearance. In these two cases it was described as cloudy. The clear fluid appearance was remarkably constant.

The Wassermann test was done in 15 spinal fluids. They were all negative. In other words, there were no false positives in 15 spinal fluids from cases of acute tuberculous meningitis.

A lesion of the skin was recorded in 10% of the cases. These lesions varied from hypertrichosis of forehead to macular and papular rashes, and apparently were incidental manifestations having nothing to do with the tuberculous process. No case had erythema nodosum and in no case was a miliary tubercle of the skin recorded. Skin lesions are more frequent in typhoid fever.

Forty-five per cent of cases autopsied had miliary tubercles of the kidneys, yet outside of the usual albuminuria with occasional hyalin casts, which accompanies fever, there was usually nothing which might convict the kidneys of a lesion. This high percentage of cases showing lesions of the kidneys suggests that efforts to find tubercle bacilli in the urine should be made more frequently.

A wide range of nervous and mental symptoms and signs were recorded in the meningeal cases. Hallucinations, paralyses, involuntary urination, irritability, headache, the making of mistakes in regular work, horizontal nystagmus, loss of knee and triceps reflexes, convulsions, delirium (in 2 cases maniacal), drowsiness, languor, coma, stupor, backache, hyperesthesias, peripheral indefinite pains, spasticity, increased reflexes, dizziness, ptosis of lids, inequality of the pupils, Argyl-Robertson pupil, sleeplessness, opisthotonos, retraction of head, impaired vision, yellow sight, buzzing in ears, deafness, drawing feeling of muscles of the face.

The frequency of involvement of the various viscera as seen postmortem was tabulated as follows:

POSTMORTEM TABLE

Postmortems were done on 40 cases. Lesions were distributed as follows, in order of frequency:

1. Viscera of the chest, t. b. lesion in	36	cases	(90%)
2. Abdominal viscera, ...	32	"	(80%)
INDIVIDUAL ORGANS			
1. Lungs, some form of lesion, .	32	"	(80%)
2. Lungs, miliary lesions, ...	29	"	(72.5%)
3. Lungs, ulcerative or caseous lesions, ...	21	"	(52.5%)
4. Meninges, ...	31	"	(77.5%)
5. Spleen, ...	24	"	(60%)
6. Liver, ...	23	"	(67.5%)
7. Pleuræ, ...	22	"	(55%)
8. Kidneys, ...	18	"	(45%)
9. Intestines, ...	16	"	(40%)
10. Ulcers of intestines, ...	11	"	(27.5%)
11. Peritoneal lymph nodes, ...	9	"	(22.5%)
12. Adrenals, ...	7	"	(17.5%)
13. Omentum, ...	6	"	(15%)
14. Heart and pericardium, ...	6	"	(15%)
15. Pancreas, ...	5	"	(12.5%)
16. Testicles and epididymis, ...	4	"	(10%)
17. Urinary bladder, ...	3	"	(7.5%)
18. Prostate, ...	3	"	(7.5%)
19. Stomach, ...	1	"	(2.5%)
20. Larynx, ...	1	"	(2.5%)
21. Thoracic duct, ...	1	"	(2.5%)
22. Diaphragm, ...	1	"	(2.5%)
23. Aorta, ...	0		
24. Gall-bladder, ...			
25. Skin, ...			
26. Retina (probably not examined in most cases), ...	0		

The above paper was read by Dr. Farley, Dr. Norris adding the following extemporaneous remarks:

Three conditions that act as diagnostic stumbling blocks are typhoid fever, pneumonia, and miliary tuberculosis. The latter, however, is less frequently overlooked than it used to be. If we keep our eyes open and take advantage of the x-ray plate, we can avoid mistakes. We hoped to bring out something new by this study. Our statistics are more or less like those already compiled; but two or three things stand out that bear emphasis. One is that in less than fifty per cent of the cases was a correct diagnosis made at the time of first examination. Considering the hospitals from which the cases came, that is probably better than the average. In one-fourth of the cases, the true diagnosis was not made until almost the termination of the disease. That is not very creditable either, but in some cases it is not avoidable. In some (we were unable to determine the exact number) the diagnosis was made by the pathologist.

The cases confused were the usual ones: cerebrospinal syphilis, brain tumor, etc. When we are dealing with one, or what we believe to be one, of these conditions, we should reflect—Are we not, perhaps, dealing with tuberculous meningitis?

A point that should be emphasized also is the fact that we usually obtain great diagnostic help from the cerebrospinal fluid. In seven cases, however, the fluid was turbid and contained a good dead of pus. We too often assume that if we find this, it cannot be tuberculous meningitis.

DISCUSSION

Dr. Paul A. Lewis (Philadelphia): Speaking as a pathologist, there is, of course, little that I can say about the paper from the point of view from which it is written. There are, however, one or two points at which the laboratory is touched. It is interesting to note that the significance of a positive Widal as a confusing thing in the diagnosis of acute miliary tuberculosis has been greatly exaggerated. That is interesting because there has often been a tendency to looseness in the interpretation of Widal reactions, thinking that it may not be typhoid when these are present. In this series of cases, there is little evidence for that.

The acute forms of tuberculosis have an interest of their own, aside from their interest from the diagnostic point of view. From the point of view of our interest in the origin of immunity reactions to tuberculosis, there is nothing more interesting than the question of how these acute manifestations of tuberculosis arise from the chronic ones, and occur sometimes when chronic tuberculosis has not been present; and how they fail so often to arise before death from chronic tuberculosis, because it is fair to say that the vast majority of individuals who have chronic pulmonary tuberculosis die without these evidences of rapid terminal dissemination to the body generally, or the meninges particularly.

A year ago, I visited Vienna and had the good fortune to see pathologists who had hospital material at their control, and to propound to them certain problems. In the conditions prevailing in Vienna since the

World War and during it, had the proportion of caseous tuberculosis, meningitis, etc., increased? In other words, had the type of tuberculosis prevalent changed, as well as the quantity; because it was a well-known fact, before my visit to Vienna, that the amount of tuberculosis there and in Austria generally had increased about two and one-half times over the amount at the beginning of the war? I have only a partial answer from these gentlemen, so far; but some statistics have come to me from Professor Stouk showing that the amount of tuberculosis handled in the hospitals had increased, and that the proportion of acute to chronic cases was entirely distorted from what it had been before the war. Those cases, classed as acute miliary tuberculosis or tuberculous meningitis were, together, in the first ten years of life, proportionately less than before the war, but had greatly increased in the period from ten to twenty years. The number of cases of chronic tuberculosis terminating in acute disseminated tuberculosis was four times greater; but this was in the ages in which it would not normally be expected to increase, as a manifestation of the increased incidence of tuberculosis. We have a certain clue in this that there has been a lowered resistance, due to unfavorable conditions of living—overwork, fatigue, undernourishment and other bad conditions of life that favor the acute disseminated type of the disease, as against the chronic type, when tuberculosis is present in the body. This may be a point of some general interest.

Dr. Francis J. Dever (Bethlehem): That the differential diagnosis between tuberculosis and typhoid fever is difficult, is, I think, unquestionable. Of course, it is a little easier, probably, in the classical textbook type of typhoid fever; but, at the present time, in my city, we are having a series of typhoid cases that are somewhat irregular in type, not running the true temperature-chart picture of typhoid fever. The Widal with the ordinary stock culture, in the first few cases, was negative. Only when we used cultures from our first admissions did we begin to get true Widal reactions.

As far as the palpability of the spleen in the two diseases is concerned, it seems to me that it does not help in the individual cases. It does not help one much to know that, in typhoid fever, the spleen is palpable in a high percentage, while in tuberculosis the percentage is low; because one cannot tell, at the time, on which side of the percentage table that particular case belongs. It seems to me probable that a very good guide—not always reliable, of course—is the pulse rate. In the vast majority of cases there is a difference between the pulse rate and the quality of pulse in typhoid fever and miliary tuberculosis.

The x-ray does not always help, as we found many times. I recall a case that was admitted to the hospital as one of typhoid fever during this present epidemic; and it was only after painstaking analysis of every bit of evidence that we could gather that it was possible to classify the case as one of tuberculosis, instead of typhoid fever.

Dr. W. W. G. Maclachlan (Pittsburgh): At the present time, we have an epidemic of typhoid fever in Pittsburgh, in children coming from the surrounding towns and from one district in the city where the water supply is from artesian wells. The question has often come up as to the differential diagnosis between miliary tuberculosis and typhoid. The thing that has appeared to be of great importance in the diagnosis is the blood culture. We have been able to isolate the typhoid bacillus in three-fourths of the cases in blood cultures, and I, therefore, would emphasize this as something of very great value in the differentiation of the disease, especially in children.

Dr. Clarence R. Phillips (Harrisburg): I have been much interested in the résumé of cases presented by Drs. Norris and Farley, largely because they presented such an interesting parallel of the failures that I had made some years ago in the diagnosis of cases of miliary tuberculosis.

I was also interested in Dr. Lewis' statement that there were so few cases of miliary tuberculosis compared with the total number of cases of pulmonary tuberculosis.

Both these statements represent the experience of many of us, I am sure. I recall, twelve or fifteen years ago, examining a child of 8 or 9 years of age at the state dispensary, and making a diagnosis of bronchopneumonia. We then lost track of the case for six weeks, when one of the nurses said, "Did you know little Jimmie X is dead?" I said that I did not and asked of what he died. "Miliary tuberculosis." Looking up the record we found that my diagnosis was bronchopneumonia. Further inquiry developed the truth of the statement as to cause of death.

Later, as county medical inspector, I saw several cases of miliary tuberculosis of the pneumonic type diagnosed by the attending physicians as bronchopneumonia. I recall also, a case of miliary tuberculosis of the typhoid type which was diagnosed as typhoid fever. The diagnosis was corrected upon the finding of tubercle bacilli in the sputum. As we have said, it is interesting to note that there are so few cases of miliary tuberculosis as compared to the total number of cases of pulmonary tuberculosis. I wish some one who can would give the reason.

Dr. Elmer H. Funk (Philadelphia): Dr. Norris and Dr. Farley have brought before us the very important problem of the diagnosis of acute tuberculosis. As an example of the difficulties with which one is confronted in the making of an accurate diagnosis, let me cite a personal experience. Two weeks ago one of our patients at the Jefferson Hospital Chest Department died of what seemed to us to be a rather typical miliary tuberculosis. At autopsy there was found the typical distribution in the lung with scattered lesions in the other organs. We could not find a primary focus and thought that the nodules might not be tuberculous. The microscopic examination of the tissues revealed the lesions to be those of miliary carcinoma. This case illustrates the difficulty in making a diagnosis at times even at the autopsy table.

I had hoped that mention would be made of the types of acute pulmonary tuberculosis which are so easily confused with bronchopneumonia on the one hand, and with lobar pneumonia on the other. There is nothing more embarrassing than to make the diagnosis of one or the other of these nontuberculous pneumonias and then find by the subsequent course of the disease that you are wrong. We have had three cases recently in which the symptoms and onset suggested pneumococcus pneumonia, but proved to be tuberculous pneumonia. The careful study of the condition of health prior to the development of acute symptoms will usually reveal in those of tuberculous origin, an antecedent history of a chronic cough, or a so-called simple pleurisy some time before, or a blood spitting which was considered of little importance, or a fistula in ano, etc., etc.

Dr. Paul A. Lewis (Philadelphia): I was interested in the question of whether the cases of acute miliary tuberculosis of the lungs ever get well. I intended to mention, in my discussion, two cases that casually came to my attention; one in a set of x-ray prints given me by Prof. Von Pirquet in Vienna. At the time the last plates were taken in this case, the child had developed pluerisy, but there was evidence of a previous steady progress toward recovery. The pathologist at Mt. McGregor Sanatorium later showed me a succession of plates of miliary tuberculosis of the lung in which the lesion was rather extensive and undergoing calcification, and the patient was improving. I have several times, in coroner's cases that have been sent to the autopsy room, very definite evidences of a slight miliary distribution of tubercles in the lung and other organs with some calcifications; so there is evidence that cases of this kind may wholly or partially heal and I believe either by resolution and absorption or by calcification.

Dr. Farley (In closing): There is one item in the chart that I should like to point out; and that is, that forty-five per cent of the cases had tuberculosis of the kidney. This suggests that an examination of the urine would be profitable in these cases. Wassermanns were made on fifteen spinal fluids, but in no case was a positive reaction obtained. The mortality was one hundred per cent.

SELECTIONS

TYPHOID FEVER; THE CORRELATION OF THE LABORATORY AND THE GENERAL PRACTITIONER*

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DANVILLE

The purpose of this paper is to call to the attention of the general practicing physician the important rôle which he may play in the complete control and eradication of typhoid fever and to point out the ways and means by which the laboratory may assist.

During the development of modern medicine, especially in the past decade, the laboratory has become more and more a court of appeal as an aid to diagnosis. Through this progress, too often the clinical man has looked to the laboratory for too much and, occasionally disappointed along a certain line, has been unjustifiedly condemnatory of the whole; with the result that in his individual case the entire laboratory has been thrown into the discard. On the other hand, very often the clinical observer starts out with a preconceived idea of the diagnosis of a case and turns to the laboratory for confirmation. When the laboratory backs up his conception, that particular worker rises in his estimation for the time being, and when the laboratory not only cannot back up his conception but actually points out a mistake, that particular worker is quite apt to be condemned and his work along all lines belittled. One often hears of either actual or supposedly different results arrived at by different laboratories along a given line as, e. g., the reading of blood serological reactions for syphilis. The result is that, if not discredit, at least suspicion is thrown upon laboratory work as a whole.

What is the position the laboratory occupies in medicine today? Beginning with the bacteriological experiments of Pasteur in the middle Nineteenth Century, followed by the cellular pathology of Virchow, continuing with the side chain theories of Erhlich, the opsonins of Wright, the serological work of Bordet and Gengou, the therapeutics of Von Behring, through to modern biological chemistry, interlaced by the work of countless others equally as prominent, there has developed the full fledged clinical laboratory of to-day with its highly trained specialists in the different branches of bacteriology, pathology, parasitology, hematology, serology and chemistry. Thus the laboratory has come to embrace every phase of medicine and may be divided into two big fields. The first takes advantage of known facts and, applying them by means of precision to a clinical case, acts as a diagnostic medium. The second works in the unknown and, taking advantage of known facts, applying them to the unknown, and developing new facts, acts as a research medium. Much new data developed by research immediately become transferred to the diagnostic field, often widely heralded and unfortunately frequently disappointing. Out of the whole, however, after thorough trials, facts become definitely established and when applied to a given case cannot and must not be disputed. The position, therefore, of the clinical laboratory to-day is a fundamental one established in part upon the rocks of fact, upon which it rests with two feet squarely set, and in part upon the fabric of research, upon which it is spreading, getting here and there a firm foothold, extending and establishing facts, and widening its sphere of usefulness for diagnosis.

The writer feels that the laboratory should not only establish facts, but should interpret them as far as its limitations will permit. In this very way the clinical laboratory is coming to occupy the same relative position of importance to the practice of medicine as a whole, which clinical medicine and surgery have occupied alone during the past. The general medical man will ever be the guiding and responsible head, but team work with other members in the future will spell success. As a result we have seen a new form of practice, group medicine, go forward by strides and bounds since the war and the laboratory occupies no small part of this practice. Whether this grouping solves the problem, the future alone will tell but it would seem to be a step in the right direction.

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*From the Department of Laboratories and Research Medicine, The George F. Geisinger Memorial Hospital, Danville, Pa. Read before the Bradford County Medical Society, Sayre, Pa., December 13, 1921.

Without the aids of the modern clinical laboratory the practice of medicine, if candidly admitted, must be groping in the dark. At times the laboratory falls far short. This is not always due to the shortcomings of the laboratory, but to unknown factors which may be established to-morrow or which may baffle for another generation. We must get together, know our mutual limitations and be thoroughly familiar with the position of our facts. It is not my intention to point out these facts. The reader is referred to any good clinical laboratory where, during conversation, differences of opinion may be straightened out. One or two evidences may serve as examples and the subject of typhoid fever may then be applied as a whole.

The finding of tubercle bacilli in a specimen of sputum establishes a case as one of active respiratory tuberculosis; a negative finding does not rule out tuberculosis by any means. On the other hand, the absence of Gram negative intracellular diplococci in pus from an acute purulent conjunctivitis rules out gonorrheal ophthalmia, while the presence of streptococci in culture from the same pus makes a diagnosis. A strongly positive blood serological reaction in an acute necrotic cellulitis of the nose make a diagnosis of syphilis which is absolutely secured by the demonstration of treponema pallidum; a negative finding of both pretty definitely rules out syphilis. An innocent appearing circumscribed nodule in a breast removed at operation, immediately prepared by frozen section and examined, may diagnose an early carcinoma with the possibility of a one stage radical operation and complete cure. The functional worth of the kidneys in a nephritic, the degree of toxicity in acidosis, the character of the endometrium following curretage, the potability of water, the percentage of solids and fats in breast milk, the type of metastasis in a lymph node, the type and group of a donor for transfusion, the type of pneumococcus in pneumonic consolidation, and the pathologico-clinical correlation of an autopsy are some of the many rocks of fact upon which the modern laboratory rests and upon which it is ever ready to assist with indisputable authority.

In the case of typhoid fever the laboratory may be of tremendous value, not only for the study of individual cases but in running down an epidemic. The credit for our present knowledge of typhoid fever from the public health standpoint belongs to a large extent to the laboratory, and the incidence of occurrence of this producer of ineffectuals would be almost nihil were the facts already established taken complete advantage of.

The writer was closely associated with the typhoid situation at Chicamauga Park, Georgia, during the mobilization of officers and men for the World War. The wonderful results obtained for this camp in the presence of widespread contaminations, as contrasted with the horrors of the same camp site during the Spanish-American War, it would seem should be a monument to American Medicine and especially to those laboratory workers who have gone before and pointed the ways and means.

Typhoid fever is produced by one of three stimuli, bacillus typhosus, bacilli paratyphosus "A" and "B." The three organisms are distinct entities in their bacteriological behavior but all have the same modes of transmission and all live under the same conditions so that we may consider them as a group unit.

The prophylaxis and eradication of typhoid fever is a public health problem and to a large extent depends upon the education of the public. To this the general practitioner may contribute a large share. He must thoroughly understand the subject in the first place, and then he must fearlessly put forth adequate propaganda. The disease is endemic and epidemic throughout most of the world. In Pennsylvania during the past summer we have had several severe milk borne epidemics, all of which could have been avoided if the communities in which they occurred had been properly and sufficiently educated and had had efficient health laws.

I cannot lay too much stress on the importance of education. In my own community we have just had a rather bitter experience. After a year's work it was shown that the milk supply was constantly contaminated, low in butter fat and watered. An ordinance was drawn and passed by the local borough officials, becoming operative on the first of July. Up to this time there had been practically no opposition, but the curtailment necessitated by the ordinance to some of the unscrupulous dealers started an opposition, which was taken up by some misguided ladies clamoring for public acclaim and even passively concurred in by some of the weaker members of the medical profession. The result was that, even in the fact of a milk borne epidemic in a neighboring town of over 100 cases with a 10 per cent mortality, the ordinance was repealed and the community reverted to its watered and manured milk. Out of it all, however, a pasteurizing plant was made operative which continues to supply the more intelligent citizens with a safe milk. For these reasons education backed by the general practitioner would seem to be the first fundamental in a health campaign.

Typhoid organisms requiré for their life and propagation heat and moisture but they withstand adverse conditions to an astonishing degree. They live in soil, will survive the freezing of a winter and multiply with the rains of the spring and the heat of the summer. Contamination starts with the discharges, feces and urine equally important, from a case of typhoid fever. First and foremost then, every drop of intestinal waste and every ounce of urine should be sterilized and the only way to accomplish this is by boiling or by steam (80 degrees Centigrade for one-half hour is adequate). Chemicals are unsafe. They are a false reliance and should be discontinued. When the discharge from every case is properly handled the spread of typhoid will be stopped at the source.

Since this ideal condition does not exist at the present time, pollution of water supplies is the first possible avenue of infection. Every community having a daily bacteriological control of its water is fairly well protected but those not so fortunate, and there are many, are open to the possibilities of an epidemic at any time. Surface wells, and even deep wells, are always a menace and should be looked upon with suspicion, especially in the summer. Fortunately, contaminated water can be made perfectly safe by filtration and chlorination, the same to be controlled by daily examination.

The second important source of infection is the milk supply. Milk offers one of the best of media for the growth of typhoid bacteria and as such must be considered the second menace for an epidemic. Correct pasteurization, controlled by laboratory examinations, will kill most of the pathologic organisms and, since the necessary handling of milk from the cow to the consumer goes through so many sources of possible contamination, pasteurization is the only proper procedure to be recommended. The opposition from the small dealer and the farmer is very great, but pasteurization is in operation in most of our large cities and before long will be enacted into law by our state legislatures.

If milk is a source, ice cream is worse because of its greater handling. The temperature of this food supply, however, keeps down growth of organisms so that there is some reduction from this source. Every large dealer, however, pasteurizes his "batch" before freezing. Fresh vegetables and uncooked foods offer a small avenue of pollution but are a possibility, especially where "night soil" is used for fertilization. Modern laws are rapidly correcting this evil. Cheese is a very likely source and we have a report of an epidemic among German War Prisoners, at Fort Oglethorpe, the result of eating homemade cheese. Soft drinks, soda fountains and the like where sanitary conditions are bad should be controlled.

The typhoid carrier group, of which Typhoid Mary, that famous case traced by Soper of New York City, is a type, constitutes a grave menace for the initiation of local epidemics. Unfortunately their detection is difficult and they are only found after the inauguration of an epidemic. When they are found as persistent food handlers, they are to be confined, and such an action by a board of health has recently been upheld by our higher courts.

Flies, those pesky conveyances of filth and muck, whose feet carry death and destruction worse than the aeroplane, the submarine and automobile put together, belong to one of the greatest evils in the spread of typhoid. Swat, trap, stick, kill, poison: use any method conceivable against this diabolical enemy of mankind's health. Here education by the practitioner will amount to heaps of good health. Clean up the breeding places, keep clean, kill the adult fly and screen all abodes and our mortality rates will drop several points. The fly and typhoid bacilli are great pals and as such should be so treated.

How can the laboratory help in the detection of these various sources of infection? By means of cultures the organisms can be isolated not without some difficulty from water, milk and foods of various kinds. As a working rule, the presence of bacillus coli, which is readily isolated, in food stuffs condemns them for human consumption on the grounds that if b. coli are present, they indicate fecal contamination and the possibility of typhoid infection.

From a case of typhoid fever the organisms can be isolated in the early days directly from the blood by means of blood cultures, and in the later stages, while they disappear from the blood, they appear in the urine and feces. In the latter case the presence of other organisms makes the procedure more difficult. By using several methods, the chances of success are augmented. The blood typhoid agglutination, the so-called Widal reaction, becomes positive about the second week and is a laboratory aid for diagnosis. When carried out by the macroscopic method, using live cultures in high dilution and with adequate controls, much reliance can be placed on this test. The older microscopic method, with dilutions of 1-40 and 1-80 should be discarded. Cases which have been vaccinated previously against typhoid will give positive reactions.

As a prophylactic means against typhoid fever, the vaccination of individuals, using killed cultures of the three organisms in saline suspension, with a dosage approximately 500 to 1,000 million, given in 0.5 cc. to 1 cc. dilutions and five to seven days apart, offers almost a one-hundred per cent method of efficiency. In the study of the incidence of occurrence of typhoid fever at Chicamauga Park, not a single case developed in a successfully vaccinated soldier, and several hundred thousand soldiers were mobilized. Cases did occur throughout the whole army but these are not to be considered for a moment an argument against vaccination. The period of immunity would seem to be about three years. Large groups of the civilian population vaccinated against typhoid fever will prove a very strong weapon in an antityphoid crusade.

In conclusion, the laboratory can be of tremendous importance in a diagnostic way to the clinician, but it has limitations which must be thoroughly understood by both parties. The laboratory serves a double function, that of using known facts for diagnostic purposes and that of searching the unknown for new facts. The laboratory understanding of typhoid fever is one of the most complete chains which we possess. If the general practitioners and those charged with the guardianship of the health of our own communities will study it from the standpoint of prevention of infection, this disease will be completely eliminated from the lists. A widespread campaign of education is in order for the purpose of bringing about clean water supplies, pasteurized milk and ice cream, clean foods, elimination of flies, isolation of carriers and last but not least, wholesale antityphoid vaccination among the civilian population, when typhoid will be relegated to a remembrance.

Dr. O. Pine queries:—Why do some complain so much about so little discussion of their papers, when they ignore completely what discussion they are fortunate enough to provoke?

INTRODUCTORY REMARKS TO A SYMPOSIUM ON THE CORRELATIONS OF NEUROPSYCHIATRY AND INTERNAL MEDICINE*

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An internist, as the term is usually employed, is one who concerns himself with diseases of the chest and abdomen, infectious fevers and diathetic diseases. My design is first to make some general remarks on the value and limitations of internal medicine and neuropsychiatry and then briefly to indicate a few of what will probably be the leading features of the papers which will follow.

In the first place I would say that no one can be a good neuropsychiatrist who has not a foundation of internal medicine, and on the other hand no one can be a successful internist who is not equipped with a considerable knowledge of neuropsychiatry and especially of neurology in its more limited significance. My experience of more than fifty years in the practice of medicine emphasizes the idea that a "fifty-fifty" combination of neurology and internal medicine cannot be made fully successful. When I say this I am not referring to commercial success but to success in the scientific pursuit of medicine.

We hear much nowadays of the best method of preparing for special practice. My own view is that after the five years now generally assigned to school and hospital instruction, at least five years more should be spent in laboratory and clinical work of a miscellaneous but constructive character, before the doctor launches as a specialist.

After my graduation in 1869 from what was termed a two years' course, although in reality it included little more than one year's instruction, like many others I gave attention, as opportunities offered, to the different phases of medical practice, serving three years at a house-visiting dispensary, and about the same time in a general medical clinic, and an out-door service for diseases of the eye. I also had the good fortune to follow for several years as an examiner or quiz master, the instruction of one of the greatest of clinicians. This work of my earliest professional years did much to prepare me for the special practice on which I began to concentrate a little less than ten years after graduation. If not the same, something similar in the way of preparation should be secured by everyone.

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*Presented at the meeting of the Philadelphia County Medical Society, November 23, 1921.

Dr. Sailer will discuss some of the correlations between gastro-intestinal digestion and mental or psychoneurotic states, including some consideration of well-known conditions like deficiency of hydrochloric acid, and increase of secretions, and the paralytic type of individual as illustrated in gastro-intestinal phenomena. The subject of the "Nervous System and Abdominal Viscera" opens up a wide field, in the macula of which such organs as the liver, pancreas and stomach fix our attention.

Serious affections of the liver do occasionally produce mental disturbance of a melancholiac type and the reverse is true that the liver, like other abdominal and pelvic viscera, may be influenced deleteriously by the presence of profound mental depression. Probably the best examples of this are the occasional occurrence of jaundice with constipation and of suppressed menstruation in melancholia. No better example can well be adduced of the correlation of the abdominal viscera with the cerebrum than that afforded by a study of the progressive lenticular degeneration of S. A. Kinnier Wilson. As emphasizing the importance of the internist knowing something of the deep problems of neurology, it is only necessary to say that the disease under consideration, while always exhibiting cirrhosis of the liver, discovers its presence by an almost purely cerebral syndrome. Besides the liver, other great abdominal glands, like the pancreas, play an important rôle in establishing the correlations between the nervous system and the abdominal viscera.

Just here I might say all that the limitation of time will permit on the subject of endocrinology in its practical relation to neuropsychiatry. For many years I have found it desirable to resort to glandular organotherapy in the treatment of a certain number of nervous and mental maladies, these including especially the use of preparations of thyroid and pituitary extracts for epilepsy, mental torpor and primary dementia, and ovarian and suprarenal extracts for hysterical and neurasthenic disorders.

With regard to the "Neural and Extraneural Interpretation of Pain" it might first be said that after all, pain is always in one way or another the expression of instability, exhaustion or irritation of nerve tissues. In brief, without nerves pain is impossible.

Time and again cases have come under my observation in which the diagnosis of neuritis or neuralgia pure and simple has been maintained, but in which the fuller investigation has demonstrated the existence of important extraneural diseases. One of the best examples of the mistakes thus made is to be found in the record of such diseases as osteosarcoma of the spine and intrapelvic or intra-abdominal sarcoma or carcinoma. Osteosarcoma in the lower spinal region, the disease eventually involving bone, membranes and nerve roots, is frequently supposed at first to be due to some form of root or other neuritis. This was exemplified a few years ago in the case of a distinguished Philadelphia surgeon. Of pyloric, pancreatic, hepatic and peritoneal carcinoma with their baneful results, it is only necessary to say that these diseases in their early, and sometimes even in their middle stages, are supposed to be primarily neural.

Sciatica, rheumatism, colic, gall stones, pleurisy, and even angina pectoris are a few of the diagnoses which I have known to be made in cases of well defined tabes. On the other hand I have known tabes to be more than once diagnosticated in cases of spinal or caudequinal tumor or localized pachymeningitis at various levels of the cord.

"Hysterical pain" is a diagnosis so often made and so often wrong, that I am inclined to challenge the diagnosis when it is first presented to me. Hysterical pain, however, although rare is a reality, but the diagnosis should never be made except in the presence of other stigmata of hysteria. I have seen almost every known form of malignant disease of the viscera (pelvic, abdominal, thoracic, and cranial) as well as aneurysm and other forms of arterial and even venous disease pronounced hysterical.

If one avoids the cerebral envelopes, large areas of the brain may be cut, punctured, burned or otherwise maltreated without a response in pain. In spite of this fact, however, we must recognize at least two forms of cerebrally initiated pain, namely that due to thalamic disease, and that which for want of a better name is called hallucinatory pain. When disease of certain portions of the thalamus is present the patient may at times suffer from severe subjective sensations of pain in a paralysed limb and may also in a paralyzed and even anesthetic limb exhibit a severe dysesthesia. Dejerine, Roussy, Head and Holmes have especially directed our attention to these symptoms of thalamic disease, the dysesthesia especially being regarded as pathognomonic. A totally anesthetic hand may for instance be the seat of a most distressing sensation when it is pinched, or a pin or other irritating object is drawn across the skin.

I have seen some extraordinary examples of what might properly be called hallucinatory pains. Two instances, of which I have vivid recollections occurred in men of the highest intellectual calibre, one a distinguished physician and medical teacher, and the other a theologian and preacher. These men at times and without any apparent exciting cause became the victims of storms of pain uncontrollable by either psychic or medicinal remedies.

The seat of hallucinatory pain is not improbably in some special region of the cortex as in the prefrontal or parietal lobe. It is now well known that the cortex is above all the portion of the brain through which our sensations are discriminated. The cortex may be destroyed without painful results, whereas disease or destruction of the thalamus may give rise to excruciating pain, which pain itself is due to the fact that the equilibrium between the cortex and the thalamus is disturbed or lost.

Dr. McCrae will briefly discuss cardiac disorders associated with pain and with certain mental disturbances, dealing not with those of more frequent or common occurrence but with some of special type. He will probably follow the same course in connection with his consideration of kidney affections.

Among the neurocardiac disorders which have come under my observation over a long period of years may be mentioned angina pectoris, both of the organic and functional types, exophthalmic goitre with its cardiovascular symptomatology, tachycardia unassociated with the exophthalmic or other syndrome, so-called cardiac asthma and cardiac epilepsy, extra systole in its variety of expressions, auricular flutter, and heart block.

I trust that the subject of uremic hemiplegia, of so much interest both to neurologists and internists, will receive some attention.

Dr. Albert Buckley, the author of the latest and one of the most valuable treatises on mental diseases, which he has designated as the basis of psychiatry, is peculiarly fitted by his practical experience and his elaborate studies to present some of the most important correlations of psychiatry and internal medicine.

The field of toxemia and infection as a cause of insanity is particularly interesting in connection with the well-known forms of mental disease which result from exhaustion and the after-toxins of diseases like typhoid fever and influenza. The former has given us many examples of the post-infectious insanities like mania and melancholia, while in recent and more remote years we have had an extensive list of affections with nervous and mental phenomena as their basis, following influenza. The field of alcoholism and of special and general forms of nonalcoholic narcomania may here invite attention.

I may however be permitted in this connection to say a few words about what to me has seemed the unfortunate use of focal infection as an assumed etiological factor in insanity. A therapeutic method, which perhaps can best be designated as a form of mutilation therapy, has had widespread and injurious propaganda during very recent years. I refer to the treatment of insanity based upon the idea of focal infection, which has lead to the removal of the teeth, tonsils and ovaries and procedures for the resection of portions of the colon. It goes without saying that the insane as well as the sane—and for evident reasons the insane even more than the sane—are liable to have infected teeth, tonsils, ovaries or intestines. Such disorders should be treated in the insane exactly on the same principles as one would treat them in the sane. Where careful examination makes it apparent that such focal infections are disturbing the general health of the patient they should be attacked by every rational measure. The great mistake which has been made by the too active psychiatric propagandists of focal infection has been in attributing to such focal infections a dominant rôle in the production of such well-known constitutional or embryonal diseases as dementia præcox, paranoia, mania and melancholia. Such infection is never the true underlying cause of any of these forms of insanity, although when present it may give rise to symptoms and conditions which aggravate these diseases and render them less responsive to legitimate measures of treatment. A careful scrutiny of the literature of this subject and not a little personal experience with patients who have undergone the treatment indicated, have convinced me that harm has thus been done, not only to individuals, but to the scientific comprehension of the nature of insanity.

GENERAL PRINCIPLES UNDERLYING THE TREATMENT OF SYPHILIS*

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It is quite obvious that in the limited time assigned, no attempt can be made to discuss in detail the enormous field of syphilis-therapy. It is equally clear that no rigid, inelastic or dogmatic routine can be presented for the management of syphilis; hence it must be most emphatically understood that only general principles will be treated.

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*Read before the York County Medical Society, November 3, 1921, in conjunction with motion picture demonstration on the Modern Treatment of Gonorrhea and Syphilis.

We naturally presuppose that every painstaking effort has been made to confirm the diagnosis. By this we infer that one has made an exhaustive personal and familial history and a most searching physical examination, including careful search for the spirochete in the chancre, infected glands (if necessary), etc.; and Wassermann tests of the blood and spinal fluid. In some very doubtful cases it may be advisable to extend the Wassermann to the various secretions, transudates, and exudates, including milk, saliva, seminal fluid, aqueous fluid from the anterior chamber of the eye, etc. (according to the method of Klauder and Kolmer), and even to demonstrate the spirochete in the tissues by the silver-agar cover glass method of Warthin and Starry.

The diagnosis of syphilis having been made, the physician is prepared to outline his course of attack. At this juncture it is necessary to repeat that no absolutely fixed routine can be recommended to suit every patient, as the judgment and experience of the clinician must be the sole guide. The patient, per se, as well as the disease as an entity, must be given every dietetic-hygiene-therapeutic consideration. However it is the purpose of this paper to present an outline of the general principles that have served the author well in a most extensive practical experience (more than three thousand arsphenamin injections), and to omit detailed technical explanations where such are deemed unnecessary.

As a composite rule, the patient is given an intravenous injection of either arsphenamin, 0.3 to 0.6 gms. (an average of 0.1 gm. for each 30 pounds of body weight), or neoarsphenamin, 0.45 to 0.9 gms., every five to ten days for a series of eight injections in primary cases, and sixteen injections in secondary or tertiary cases. During this same period, inunctions of either the official mercurial ointment or 33 1-3 per cent calomel ointment are prescribed, with details of application, daily for five days with a rest period of two days and a week's rest after every ten inunctions. After the first series of arsenical treatments, a month's rest is usually ordered, and a second series, with one-half the original dosage, is administered. Following this, a two month's therapeutic rest period is suggested, when another Wassermann is taken. If negative, no further arsenical treatment is administered, but the Wassermann is repeated every three to six months for at least three years. If, however, it persists or at any time becomes positive, a course similar to the first or second series is repeated, depending to some degree upon the clinical signs and symptoms as well as the intensity of the positive Wassermann. This method of treatment, subject to modifications, is followed until the clinical picture shows the expected improvement and a repeatedly negative Wassermann or a Wassermann-fast is obtaineed. This latter phenomenon will be treated at greater length in a more appropriate paragraph.

As this routine is frequently modified by the use of various arsenicals, as well as by the numerous mercurials, etc., it is essential that we briefly consider these remedies. My own experience leads me to prefer arsphenamin to neoarsphenamin, and also to employ the old-fashioned mercurial ointment instead of the more cleanly calomel ointment, although there are times when variations are quite necessary. However, each clinician is guided by his own experiences, which makes it quite desirable to discuss the more commonly employed preparations in the groups to which they belong.

I. MERCURIALS

The most universally employed mercurial, per os, is hydrarg. protiodid. gr. ¼ to ½, after meals, t. i. d.; with a day's rest each week. By inunction, one may employ either blue ointment or mercurial ointment, ½ to 1 dram, at bedtime, with two days' rest each week, and a week's rest after each ten treatments. The error is sometimes made of confusing these two ointments, when, in reality the former contains 35 per cent and the latter 50 per cent of metallic mercury. In prescribing any form of mercury by inunction, I have found the pure lard base far superior to petrolatum, lanolin, etc., in that it unquestionably permits better and more complete absorption. If prepared freshly, and especially in cool weather, it does not become rancid. In warm weather, 5 per cent to 10 per cent of white wax or simple ointment (which consists of equal parts of lard and white wax) may be added to stiffen it. Calomel ointment, 33 1-3 per cent, may be substituted in doses the size of a large pea, calomel containing 99.67 per cent of mercuric chloride. In my own experience with both, I have been won back to the mercurial ointment, having noted more physiological effect from it. Colloidal mercurial ointment (10 per cent) has been highly recommended as an inunction, owing to its supposed rapid diffusion and absorption. Hypodermically, hydrarg. chlor. corrosivi (73.88 per cent mercury and 26.12 per cent chlorine), gr. 1/10, in normal saline, or neutral salicylate of mercury (59.59 per cent mercury and 40.41 per cent salicylic acid), grs. 1 to 1½, in sterile emulsion, about twice weekly, are the preferable drugs. More recently, mercurosal (derived from salicylacetic acid and mercuric acetate) has been employed with success, both as a preliminary to arsenical treatment and as an associate with it. It is a white amorphous powder, with a slight yellowish tinge, freely soluble in water, making a faintly alkaline solution. Its molecule is said to contain 44 per cent by weight of metallic mercury (4/7 as much as bichloride) and to be only 1/7 as toxic as corrosive sublimate. Used intravenously, the contents of one ampoule, 0.1 gm., are dissolved in 5 c.c. of sterile water and injected slowly; by the intramuscular route, the contents of one "intramuscular" ampoule, 0.05 gm., are dissolved in 2 c.c. of sterile water and injected deeply. Ten to twenty injections, at two or three day intervals, are advised, with a rest period of four to six weeks before another similar course is begun. The kidneys must be closely watched, as the mercury is excreted largely by this route. Impetus to the vaporization or fumigation method has recently been revived by the exploitation of a preparation called "Spirocide" (mercupressen), which is said to contain mercury, copper, and a vegetable matter compressed into a ten gram pastille. When ignited, it burns slowly (15 to 30 minutes for complete combustion) and is therefore administered by fumigation or inhalation. The treatment is employed daily or every other day until six to nine treatments have been administered. I have employed this method of treatment about fifty times but am unable to wax enthusiastic about its superior virtues. If vaporization is indicated, I prefer the burning of calomel, grs. XX-XXX. If the administration of mercury is not helpful, the patient will feel worse, function worse, and may have a fetid breath, hypersecretion of saliva, or even sore gums. The urine may exhibit albumin and casts; there may be colicky pains (oral administration), or even frequent bloody stools. Loss of weight and of "pep," etc., call for a lessened dose of mercury, or even a cessation—even more so the development of other untoward signs and symptoms of overdosage. During its administration, therefore, fetid breath should be smelled for, and undue salivary secretion asked for as the early symptoms of overdosage.

Before concluding the discussion of mercurials, brief mention might be made of mercurochrome-220 soluble, which contains 23 per cent to 24 per cent of mercury in organic combination with the dye molecule. A 1 per cent solution saturated upon gauze and employed as a wet dressing in the treatment of chancre has proved most serviceable. It should be applied daily, after thorough cleansing of the ulcer and the removal of all loose necrotic tissue by careful sponging. As a substitute, the drug may be employed in a starch paste or with a lanolin base. When the chancre begins to heal and the granulations take on a healthy appearance, a simple protective ointment, containing boric acid, is employed.

II. ARSENICALS

The most important adjunct of the mercurials in the treatment of syphilis is arsphenamin in one of its various forms, arsenic administered in this manner having been conclusively proved to be specifically antagonistic to the existence of the treponema pallidum. It is not within the domain of this discussion to treat the technical details associated with the administration of these arsenical compounds, but rather to outline the general principles involved, and more particularly to become familiar with the modus operandi of the chemical, physiological, and pathological results of such administration. As the toxicity of most potent drugs depends in large measure upon the dosage employed, it is quite essential that clinicians avoid the therapeutic dogmatism that has been too often the cause of pitfalls. Thus Sicard, of Paris, extols the excellent results that he has obtained with small doses of neoarsphenamin, continued until eight to ten grams have been administered. He claims that all tendency to "shock" is thus avoided. Schamberg, Davids, Kaplan and others have observed instances where the heroic employment of salvarsan (and mercury) could be held directly responsible for the patient's death.

It is important to note the degree of involvement, and carefully to determine the amount of improvement possible without administering salvarsan ad libitum, instead of depending exclusively upon the serologist to indicate when the treatment is to be discontinued. This precaution is further emphasized by the careful observations of Schamberg, Kolmer, Locke, and others who have clearly demonstrated that serious consequences are by no means unknown today in the forms of treatment wherein such drugs are employed. In an elaborate series of studies concerning the histologic changes produced in the organs of experimental animals by the use of arsphenamin, neoarsphenamin and mercury, Schamberg and his associates found that the arsphenamins produced demonstrable effects chiefly in the liver, suprarenals, and blood vessels, while the mercury seemed to have a special affinity for the kidneys and the brain. If mercury is employed, and impairs the kidney elimination function, it is quite obvious that the arsphenamin will remain for a longer time and in larger quantities in the liver, where it may become oxidized, forming arsenoxide, or the arsenic radical may become split off, causing arsenical poisoning—even acute yellow atrophy. It is clinically important, therefore, to watch closely the kidneys in mercurial treatment, and the liver when arsphenamin is administered, since the "chemical foes of the spirochetes are not always indifferent towards the tissues of the host of the parasites."

Broadly speaking, the toxic effects of these drugs can be attributed, with little resistance, to three causes, viz: (a) inherent toxicity of the drugs, per se, (b) errors in technic and (c) anaphylactoid factors.

(a) L. Queyrat, of Paris, and others have issued the warning that the arsenicals employed in the treatment of syphilis are likely to contain more or less of a substance which is twenty times more toxic than arsphenamin. This substance is amino-oxyphenylarenoxyde. Other unidentified impurities in this drug have been reported by various observers. With the U. S. Public Health Service regulations, it is rather unlikely that the arsenicals we now employ will contain harmful amounts of such extraneous toxic substances.

(b) Toxic symptoms have not infrequently resulted from a faulty technic in the administration of arsphenamin. In fact, it has often required most painstaking investigations to discover this fault. As a striking example, undesirable reactions have been traced to the employment of new rubber tubing, and even to excessive shaking in the preparation of the solution. New rubber tubing should be soaked for several hours in a 5 per cent solution of sodium hydroxide and thoroughly flushed out before use with sterile, freshly distilled water. The solution should not be shaken more than once or twice, as excessive shaking, in the presence of air, rapidly oxidizes arsphenamin and may render it toxic. The ampoules containing the arsenical should always be immersed in alcohol to detect evidence of cracks in the glass, and indirectly oxidization of the drug through contact with the air. The water employed as a diluent should always be subject to investigation, whether it be sterile tap water or distilled, and fresh hydroxide solution should be employed as frequently as possible, the bottles being well stoppered when not in actual use. Too rapid administration should be guarded against as a routine, the usually accepted routine being one decigram for each minute, and 20 c.c. of dilution for each decigram. Many other less important factors in the technic are too well known to receive further comment in this paper.

(c) Everyone who has had much experience with the administration of arsphenamin has seen the acute "nitritoid" or "anaphylactoid" reaction, consisting essentially of chills, rebellious headache, suffusion of the face, choking sensations, and the various cardiorespiratory symptoms that have made their appearance during or immediately after the intravenous injection of arsphenamin, and also the later gastro-intestinal upset, with severe and persistent vomiting, and frequently associated diarrhea, some hours after the administration of the drug. The theories for the causation of these phenomena are many and varied, chief among which are the following: (1) The rejected antigen, elaborated in the blood stream, causing intoxication; (2) The proteins of the serum of the sensitized animal, i. e., by a change in the dispersion of the colloids in the blood stream; (3) Peculiarities in the individual blood plasma (some intimate relationship existing between the arsphenamin and the suprarenal system); (4) Traces of unidentified impurities in the drug, as previously mentioned in (a); (5) The result of too rapid administration of the drug (b); (6) The rapid lowering of the blood pressure where hypotension has already existed, since arsenic tends to lower vascular tone.

It is, therefore, imperative that we employ prophylactic measures, whenever possible, to avoid these untoward complications. The method first suggested by J. H. Stokes, slightly modified, has been employed by the author with most excellent results. The patient is given the usual specific instructions regarding partial fasting and gastro-intestinal toilet preliminary to treatment. E. D. Cortelezzi, Buenos Aires, insists on a salt-free diet for twenty-four hours previous to injection, and I have added this restriction in some cases where slight albuminuria was known to be present. Special attention is given to careful alkalinization of the arsphenamin solution to prevent precipitation in the blood stream. Induction of anti-anaphylaxis (Besredka technic) is practiced by dividing the individual dose of arsphenamin into two portions, a small preliminary injection of 1/10 of the total dose being given one hour before the larger portion, the remaining 9/10. Atropine sulphate, gr. 1/50, hypo. is ordered to be given twenty minutes after the first portion of the injection, and often adrenalin chloride solution, fifteen minims, hypo. is administered about five minutes previous to the larger injection. This latter often acts as a control for the reaction, should it develop (Milian), and even acts as a prophylactic (L. Berman). L. Queyrat, of Paris, urges prompt venesection, and the instillation by the drip method of 1,000 to 1,500 grams of normal saline containing glucose, and epinephrin daily up to 5 or 6 mg. to overcome the malfunctioning of the suprarenals. Sicard, of Paris, employs a preliminary intravenous injection of sodium bicarbonate. I have never had occasion to employ any of these latter measures.

More recently, silver salvarsan has been extensively employed, having been introduced by Prof. Kolle, Ehrlich's successor. This preparation consists of salvarsan activated and biologically reinforced by combination with silver. The curative value of 0.1 to 0.2 gms. of silver salvarsan is said to correspond to 0.3 and 0.6 gms. respectively of neosalvarsan. In adults 0.1 to 0.2 gms. are administered at intervals of not less than four days in women, and 0.25 gms. in men. The contents of an ampoule are sprinkled on the surface of 5 c.c. of cool, sterile, doubly distilled water, when it will be seen to dissolve rapidly and completely, yielding a dark brown, icthyol-color solution. Sufficient cool 0.4 per cent sterile saline solution is added, so that the final solution will approximate 20 c.c. per decigram of the drug, when it is ready for intravenous injection. The author has employed a more concentrated solution without untoward results. Silver salvarsan contains 22.4 per cent of arsenic, and 14.1 per cent of silver, the latter being present in a complex combination, the silver salvarsan being hydrolized in the body and set free as true colloids. It is reported that silver salvarsan has a chemotherapeutic coefficient of 1 : 25 as compared to 1 : 10 for arsphenamin and neoarsphenamin. It contains two chemotherapeutically effective components, the silver having a catalytic effect on the salvarsan molecule. In other words, the silver is successful in preventing an increase of spirochetes because of the specific affinity of the salvarsan for this organism, the silver with the whole molecule of the silver salvarsan being anchored fast to the spirochetes of the syphilitic tissues, thus making the silver of special chemical therapeutic value. Before injecting this drug with a Luer syringe, it is advisable to draw some blood into the syringe, as the toxicity of the silver salvarsan is immediately reduced by the addition of albumin or serum. Injection should consume about one minute. My own experience coincides with the reports that this preparation is a very reliable spirocheticide, and that it is certainly not more toxic than any of the arsphenamins. Its effect, as studied by clinical symptoms and the Wassermann, is most gratifying, especially in primary syphilis.

Sodium arsphenamin, which has also been employed rather extensively, is not merely an alkalized arsphenamin, as, in its preparation, certain reagents are added which doubtless cause some structural molecular change to the disadvantage of the compound. Schamberg, Kolmer, and Raiziss, in reporting the results of careful experimentation with this preparation, conclude that "while sodium arsphenamin possesses the low toxicity of neoarsphenamin it is much inferior to both arsphenamin and neoarsphenamin in trypanocidal or curative activity."

A number of aliphatic compounds, notably monarsone (disodium ethyl arsenate), sodium cacodylate (sodium ethyl arsenate), soamin (arylarsonate), and cacodyl or arrhenol (disodium methyl arsenate) have been employed in the treatment of syphilis. B. A. Thomas, Philadelphia, has administered as much as thirty grains of sodium cacodylate (38 per cent arsenic) intravenously, twice weekly, without the slightest toxic symptoms, and also with only very slight effect on the syphilitic lesions, and absolutely none whatever on the Wassermann reaction; the same being also true concerning the results from the use of soamin. Henry J. Nicholas, Washington, D. C., in his experiments with rabbits, employing monarsone (37.86 per cent arsenic), concluded that it lacked the essential characteristics of the arsphenamin group, viz: the high spirocheticidal value, as the tissues were fatally poisoned as soon as or before the spirochetes were affected. The arsphenamin group must be oxidized and their relative action depends on the relative rate of excretion. The pentavalent aliphatic compounds must be reduced to this same form, and as reduction is more difficult in the body than oxidation, a large amount of the drug is excreted unchanged and without action. The author's experience with monarsone corroborates these conclusions from a clinical standpoint, and the same applies to the other aliphatic compounds in their relationship to the arsphenamins.

Before concluding the discussion of arsenicals, brief reference should be made to their employment in the spinal treatment of lues, by the Swift-Ellis and other methods. The end results, as a rule, are not most flattering. Good results are frequently claimed because the cells in the cerebrospinal fluid from patients thus treated disappear with phenomenal rapidity. However, pleocytosis is no longer considered an index of the presence or absence of syphilis, but merely indicates that somewhere in the central nervous system the vascular membranes are in contact with some irritant, not necessarily the spirochete. The reason for the rapid disappearance of the cells, and even the subsequent improvement, is found in the fact that the nervous structures respond more readily to the slightest kind of stimuli when the pressure produced by the exudate is partially removed. The exception to this generalized rule is the marked improvement often seen in early syphilitic meningitis (John A. Fordyce), although Marinesco's experience has been that the best results can be anticipated in the mania and melancholia forms of general paresis (where 50 per cent of his 30 cases showed considerable improvement), and also in incipient syphilitic paraplegia. According to Geo. J. Wright, Pittsburgh, the Swift-Ellis is being superseded by the Ogleby method, which is a definite method of giving salvarsan to the patient's serum, the average being 0.3 mg.

III. IODIDES

In the later secondary and particularly in the tertiary stage of lues, the iodides have proved of value. Potassium iodides (76.45 per cent iodine) and sodium iodide (84.45 per cent iodine) have been most freely employed. They are best administered in suitable doses in saturated solution, diluted with a half glass of milk, or in a vehicle of aromatic enzymes (Armour), preferably after meals. Sajodin (26 per cent iodine and 4.1 per cent calcium), iodipin (10 per cent and 25 per cent iodine), and lipoiodine (41 per cent iodine) also have been employed rather extensively. A rather large experience has led me to prefer lipoiodine, first brought forward by Dr. J. Laborderie, of Paris. This drug is a derivative of a fatty acid—brassidic acid—which fixes two molecules of iodine, then gives with ethyl alcohol an ester, ethyl di-iodo-brassidate (lipoiodine). Owing to its stability and the slowness of its absorption and elimination, because of the amount of iodine it fixes in the tissues, especially in the nerve and fat cells, it allows a general, progressive, and continuous action to be set up and easily maintained by fresh small doses, without recourse to the massive and repeated administration of the usually given alkaline iodides. It has been found most useful in syphilitic and parasyphilitic conditions, permitting intensive treatment without risk of iodism, gastro-intestinal disturbances, etc. The dose usually prescribed is 0.3 gms., three or four times daily.

A very essential factor in the management of syphilis is the closer coöperation, or team work, between the clinician and the experienced serologist, in determining the extent of treatment; as the Wassermann report, per se, cannot be depended upon as the sole guide, either in diagnosis or treatment. The persistence or intensity of a positive Wassermann, or even its disappearance, furnishes only incomplete although valuable criteria for continuing or discontinuing treatment. The negative accuracy of the Wassermann, according to Dr. J. L. Laird, Philadelphia, is 98 per cent. J. R. Williams, Rochester, N. Y., found 4.4 per cent of positive Wassermanns in a group of 912 individuals representing chiefly the great American middle class, none of whom was known to have had lues, or to have any evidence thereof. Davids Kaplan reported cases in which there were no traces of syphilis, even at postmortem, in which positive Wassermanns had been obtained. You are all quite familiar with the many nonluetic infections which frequently give positive Wassermanns. However, the percentage of such cases is not sufficiently large to justify a lack of confidence in its diagnostic value.

There are, however, many instances where the spirochete, exposed for a protracted period of time to the onslaughts of arsphenamin and mercury, develops a "tolerance" to such metals and the effectiveness of the remedy seems to be lessened. The spirochete is said to become "arsenic-fast," or "mercury-fast," as the case may be. The studies of J. H. Stokes and G. J. Busman, Rochester, Minn., are most interesting in this connection. They have reported Wassermann-fast reactions in 458 syphilitics who had received from 12 to 29 arsphenamin injections, combined with mercurial inunctions, the average being 14 injections and 90 inunctions in 11 months. Every stage of lues was represented in this large group. Of extreme importance was their observation that 65 per cent of the patients with cardiovascular disease had aortitis; 60 per cent had myocardial changes. Of the neurosyphilitics, 40 per cent had paresis and 50 percent had clinical tabes. Fifty per cent of the patients with neurosyphilis had cardiovascular syphilis also; and in the same percentage of the group, gastric and hepatic syphilis were recognized. It is also of interest to note that pyogenic foci were present in 74 per cent of the patients who exhibited these resistant Wassermann reactions, although no definite etiologic relationship could be demonstrated: the same being true to a lesser degree concerning alcohol (12 per cent). There was no evidence, either, that the Wassermann-fastness was the result of any special strain of organism. From these findings, it seems evident that a persistent positive serum Wassermann reaction accompanies the grave rather than the mild type of lues, and that these patients should be periodically examined with special reference to their cardiovascular and nervous systems throughout life. Robert A. Kilduffe, Pittsburgh, and others have reported similar experiences. Albert Strickler, H. G. Munson and D. M. Sidlick, Pittsburgh, report that arsphenamin was injected in thirty patients with various dermatological conditions, but in whom, previous to these injections (a) the Wassermann was negative, (b) the history was definitely negative, and (c) the skin lesions were clinically nonluetic. The results were most interesting. Sixteen, or 66 per cent, gave at least one positive Wassermann; fourteen, or 55 per cent, gave two or more positives; and nine, or 38 per cent, gave reactions of two plus or greater intensity. Kolmer attributes these phenomena to a "serologic Herxheimer reaction," due to the influence of the drug on the activities of the spirochete in latent syhilis—the so-called provocative reaction. Thus it can be seen how difficult it is, at times, for the clinician to place too much reliance upon the reports of the serologist, per se. As a lone example of many, Dr. John M. Blackford, of Seattle, Washington, in 25 carefully selected cases with definitely positive histories, received different reports from seven coöperative laboratories, ranging from a minimum of five to a maximum of twelve positive reactions. The chief errors are caused by (a) the personal equation in relation to exactness of technic, and (b) the variations in the quantities and qualities of the biologic reagents employed, more especially the kind and dosage of antigen. A move in the right direction has recently been made by Dr. John A. Kolmer, who has presented the serologists with a new technic in an effort to bring about a standardization of the Wassermann reaction, in order to minimize the marked discrepancies in the reports so often obtained by clinicians and even in the results obtained by different laboratories examining portions of the same serum. It is to be hoped that some such standardization will soon be found acceptable to all serologists, especially since so much reliance is placed upon this test. The Noguchi and the Sachs-Georgi tests have many followers, but their accuracy and usefulness cannot be exactly compared with the Wassermann. The formol reaction of Gate and Papacostas is of very little diagnostic value because of its failure to react in clinically clear cut cases of syphilis and the occurrence of positive reactions in absence of the disease. E. E. Ecker, Cleveland, applied this reaction in a series of 500 comparative tests in which the Wassermann reaction was carried out by the ice-box method with three different antigens, viz: syphilitic fetal liver, normal human, and beef heart antigens. Of the total number of positive reactions obtained by the formol method, only 37.09 per cent agreed with the positive results obtained by the Wassermann method; of 44 positives by the formol method, only 13 were positive by the Wassermann. Although it is generally agreed that the Wassermann furnishes the best control of treatment and that it is the most reliable index of cure, it must not be solely depended upon as an absolute guide in either case. Personally I am in full accord with the conclusions of B. A. Thomas, who states that the ultimate proof of cure does not rest necessarily upon continuously negative Wassermann reactions for one, two, three, five, ten, twenty, or even forty years, but rather upon the complete freedom of signs and symptoms for a generation or more.

SHALL A PHYSICIAN MAKE A DOCTOR OF HIS BOY?

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Among other physicians, I am debating this question in my own mind. I should like to look at it from several different aspects, with the hope of provoking some discussion on the subject which may be helpful to a number of the readers of this Journal.

There can be little doubt that some boys and young men are temperamentally fitted for the work of a physician. This seems so clear that it hardly admits of any argument. But there is a large number of boys for whom the question is debatable and who are not sure they desire to be physicians and who would like some light on the subject.

The question can be divided roughly into two aspects (1) the business or economic aspect and (2) the sentimental or more strictly professional aspect. In this paper I propose to discuss chiefly the business or economic aspect of the subject, understanding of course, that it is only one aspect of the subject and that the other must receive its full consideration.

Presuming the boy is graduated from college at the age of 23 and pursues a four-year medical course and takes one year in the hospital, he is then 28 years old when he begins to practice medicine. He probably began his studies at the age of six and has been in school, therefore, twenty-two years when he begins to practice. His education has cost many thousands of dollars; and he can hardly begin to be self-supporting for another two years. This means he can hardly hope to marry until he is thirty, depending upon his own exertions for financial support.

Let us look for a moment at the other careers which present themselves to the boy who has finished high school or preparatory school, say at the age of 19. He may then go to a technical school and receive a business or a technical education which will qualify him to be an engineer or a chemist. There is great demand for the services of a young man with this sort of education. I am informed that they are snapped up at once and if the young man is reasonably bright and energetic he can make $3,000 or $4,000 by the time he is twenty-six and often makes $5,000 a year before he is thirty.

From the economic point of view there is this to consider: a physician who begins his career at the age of 28 and who has practiced for thirty years is then 58 years of age. He has built up no organization and his work is altogether personal. If he takes a vacation he loses his income for the time being, for he makes no money while he is away; and the same is true in case of sickness. In case of his death his son inherits nothing; no organization has been built up by the father. Books that cost $6, $8, or $10 are sold for 40 cents. What is realized is a pitiful sum. On the other hand if this boy had entered into a business career and had been successful, as he was in medicine, he would have built up an organization and when he went away for three months' vacation he would be making as much money as when at home. When he dies he has left an organization which will be carried on by his sons. From the economic point of view this is a matter of importance and should receive careful consideration.

We have heard a great deal of the nobleness of the physician's calling. But are we nobler than all other classes of men? I believe that all professions are noble and offer opportunity for good. For instance, a man at the head of a large enterprise who is kindly and humane may, by operating his plant in modern sanitary up-to-date fashion, do his employees more good than could be accomplished by any individual physician. We laugh at lawyers; but they are in a position to do an immense amount of good and many of them do. So with the clergy; so with engineers. To-day a business career has been made scientific. It is an extremely interesting career and affords a means not only of making a living but a large fortune. It may call forth the best qualities of the head and the heart. It has been my lot to come in contact with a large number of business men who have attained eminence. I wish to say that I think they are a high grade of men whose qualities of heart and head are not inferior to those of the physician.

It is the fashion to decry money and say it is not everything and some say it is nothing; yet we are living in a world in which money is required at every turn. Granting that its use is limited and that it fails to do many things, yet we must have it, say what we will. Say there are two men who we will suppose have good heads and hearts. One has $20,000,000 and the other nothing. Both wish to help along a good thing which requires financial assistance. One can only wish it well, while the other can give it a substantial contribution. Money, with the warning that it should be properly used and properly earned, is something which no father need warn his son against. Indeed I think it is better to urge him to do his best to make money.

My conclusion is that all the higher occupations of life calling for leadership require the highest qualities of head and heart, and opportunities of doing good are abundantly found in any of them. The making of money should not be regarded as the prime thing in life but the accumulation of a fortune generally should be regarded as desirable. Medicine hardly affords a superior opportunity for doing good in the world to the law, the ministry, commerce or engineering.

And yet this statement I think needs some qualification as being perhaps too broad. For some boys medicine certainly does afford happiness and means of doing good in the world. These boys and men are destined for the career and should follow it. But the thing I have in mind particularly is that we should not take too seriously the oft repeated statement of over emotional laymen that we are the noblest profession in the world and the finest set of men in the world, etc., etc., for to do so would lead us to look down on other men and on other callings—a thing that would be ungracious and unwise to say the least.

Let us by all means honor and respect our own calling, but let us disparage extravagant and fulsome praise. At the same time let us freely pay tribute to the worth of other professions and the men in them who have led useful lives and contributed to human welfare.

LIKELIHOOD OF ERROR IN ABDOMINAL DIAGNOSIS

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Some of the most difficult problems that face the surgical diagnostician are to be found in the correct interpretation of abdominal affections.

Various authorities are quoted as estimating the number of incorrect diagnoses in these classes of affections as anywhere from forty to sixty per cent, the error being often recognized only at postmortem.

By far the greatest number of blunders is encountered in diseases of the duodenum, the gall-bladder and the appendix. Another group of cases wherein errors are quite constantly to be found, is in the confusion between duodenal and gastric ulcers, on the one hand, and cholelithiasis, on the other. It is estimated that thirty per cent of instances of duodenal ulcer are incorrectly diagnosed as gall-stones.

In a study of 264 operations for gastric ulcer at the Mayo Clinic during the years 1913 and 1914, and reported by Eusterman,[1] there was an error in the primary diagnosis of 33 per cent, although an alternative diagnosis of gastric ulcer was made in 8 per cent. In 27 per cent of these cases the diagnosis made was that of duodenal ulcer.

In 814 cases of duodenal ulcer observed in the same period, there was an error of 33 per cent in the primary diagnosis. In 10 per cent of the cases of duodenal ulcer the diagnosis was gastric ulcer. Non-calculous cholecystitis is quite a common affection and in many instances such a condition has long preceded the formation of gall-stones. The diagnosis, as a rule, is only confirmed after the gall-bladder is opened, for the errors most likely to be committed are to confuse conditions arising in the appendix, the right kidney or the pyloric end of the stomach or duodenum with this form of gall-bladder disease.

In advanced gastric cancer of the stomach there is usually little difficulty in making a diagnosis, the only mistake that would be likely to occur being either the mistaking of an inflammatory tumor associated with ulceration, or mistaking the existence of a syphilitic tumor for a malignant neoplasm. But even with the abdomen opened there may be experienced much difficulty in deciding on a diagnosis between inflammatory disease and a new growth.

Even so eminent an authority as Mayo Robson asserts that in a number of instances he has operated for large growths at the pylorus or upon the body of the stomach, where extensive adhesions seriously interfered with the operation. In most of these instances enlargement of the glands made the likelihood of malignancy more than probable and yet, after the gastroenterostomy in the hope of offering a temporary relief, he was amazed many years later to find not only that the patient was alive, but that he was absolutely well, showing that the supposed cancer was only some inflammatory thickening around an ulcer which was cured by setting the parts at rest.

Many of the best surgeons declare, and this is emphasized by Finney and Halsted, that only a microscopical examination can differentiate positively between an inflammatory tumor and a gastric cancer; although the presence of a non-malignant growth is favored by the presence of many adhesions and the discreet character of the enlarged glands which are softer than the glands in malignant disease. Such findings, however, do not warrant the pronouncement of anything like a positive diagnosis. This alone proves the great difficulties in abdominal diagnosis—the inability to offer a positive diagnosis when the pathological process is exposed to view. Robson recites a case where he was in error, mistaking a hypertrophic stenosis of the pylorus for cancer, the mistake being most likely made because of the advanced age of the patient.

Again, there is often great confusion in the interpretation of abdominal symptoms as are manifested in diseases of the gall-bladder, the appendix and the pancreas, the so-called accessory digestive tract. In many of these affections the symptoms noted may so resemble either a gastric or a duodenal ulcer as to completely deceive the very best diagnostician. And, again, diseases of all these organs may *simultaneously coexist,* thus making still more difficult the interpretation of the real condition. Some years since, Eusterman,[2] in an interesting article, reported the association of chronic cholecystitis or cholelithiasis, or both, and chronic appendicitis in conjunction with peptic ulcer in 9.7 per cent and 40 per cent respectively.

The protean nature of gall-bladder symptomatology is responsible for endless errors in diagnosis, for gall-stones may only evidence themselves by awakening the sleeper with pain which disappears with the oncoming of morning. It is often a matter of refinement in diagnosis to differentiate a cancer of the gall-bladder (not dependent upon or following stones), especially of a secondary type, from malignancy of the head of the pancreas. When the gall-bladder has been the seat of severe infection, the result of bacterial invasion, variously argued as coming from the intestines or by way of the portal circulation, its mucous membrane becomes irreparably injured and changed, and a "strawberry bladder" results. This condition, with the symptoms that are manifested, is very often mistaken for duodenal ulcer.

One of the difficulties in abdominal diagnosis is the recognition of renal or ureteral calculi which may be present and offer symptoms that give little clew to their presence. Renal colic may be confused with intestinal colic and, when on the right side, with hepatic colic or the pain from perforating appendicitis. As the urine may be absolutely normal and the x-rays divulge nothing, recognition of the condition is often a matter of vexatious investigation and study, with a negative finding as the reward for endeavor.

The pain encountered in acute appendicitis is often most confusing to the diagnostician, so that it is not a rarity to pronounce such a case as intestinal obstruction, or as acute or chronic enteritis. Again, what is often regarded as acute appendicitis is really gastric or duodenal ulcer or acute pancreatitis. Many cases of appendicitis are reported that were erroneously diagnosed as typhoid fever, suppuration or twisting of a pedicle of an ovarian cyst, renal or ureteral calculus, empyema of the gall-bladder, hepatic colic, movable kidney and, if the appendix lies posterior to and against the outer layer of the mesocolon, as a perinephric abscess.

Strange as it may appear, all sorts of peculiar, not to say amazing, errors have been committed by not a few men of eminence in mistaking the vague and undefinable pains attendant upon tabes dorsalis as grave affections of abdominal organs. It must be remembered that tabes is a disease that is often not recognized until the occurrence of its later symptons, so that the occurrences of the "pain crises" is not infrequently entirely misunderstood. The gastric crises are frequently diagnosed as peptic ulcer, while the genito-urinary crises may closely simulate renal colic. It is not to be forgotten that in the vast majority of cases of tabes, syphilis is an important etiological factor so that there is another important element in the study and the causation of pain that may be manifest. Under the caption "Needless Surgical Operations from Failure to Recognize Tabes Dorsalis," Nuzum,[3] in an elaborate and painstaking study of one thousand tabetics, asserts that 8.7 per cent had been subjected to operation under the erroneous idea that they were victims of serious organic disease of the abdominal viscera. The diseases most commonly diagnosed in this connection were gastric ulcer, appendicitis and affections of the gall-bladder.

About five years ago, Foss,[4] in writing of the experiences gained at the Mayo Clinic, details in a brilliant paper, "The Element of Error in Abdominal Diagnosis," the blunders that are likely to be committed at the hands of some of the best thinkers in the profession. He lists eleven hundred and seventy patients, about half of whom came to operation. With this latter number, it was found at operation that 10.08 per cent of the number had been erroneously diagnosed by the clinicians. In six cases that had been diagnosed as duodenal ulcer, at operation three proved to be chronic appendicitis, two were cases of chronic cholecystitis, and one gastric cancer. Two cases of chronic cholecystitis proved to be, in one case, a duodenal ulcer, in the other, a gastric carcinoma. Four cases of supposed chronic appendicitis, at operation were found to be a duodenal ulcer, gall-stones, chronic cholecystitis and a hydrosalpinx. A case of pyloric ulcer showed itself upon laparotomy to be a carcinoma, and two cases of pyloric obstruction, most likely ulcerous, were found to be chronic cholecystitis and syphilis of the stomach.

This same authority quotes Mayo as saying that "Ninety per cent of supposed diseases of the stomach are not entities but rather groups of symptoms masquerading as diseases and named accordingly." Of course, every physician and surgeon knows the number of maladies that are purely psychic affections (?) that are so commonly referred to the viscera. And while it is estimated that such neurotic symptoms are responsible for at least 20 per cent of needless laparotomies, nevertheless, so long as these neurotics continue to experience all varieties of painful impressions, just that long will needless operations be performed. This brings the question prominently to the fore, does not the x-ray reveal much to the inquiring clinician?

The answer, naturally, is in the affirmative. But what the rays are *not* capable of accomplishing is quite as important a matter. What one cannot distinguish by the microscope he cannot differentiate by the rays and McCarty[5] points out that, pathologically, there is no recognizable differences in structural outline between early carcinoma of the stomach and simple chronic ulcer. He also remarks that the diagnosis of an early carcinoma in the border of a chronic gastric ulcer is the question of the position of a few undifferentiated epithelial cells in the mucosa or submucosa, and it still remains an open question whether the x-rays can or cannot differentiate such small question of cells from *normally* differentiated epithelial cells, or the cells of other tissues in a chronic ulcer.

In attempting a differential diagnosis between gall-bladder disease and appendicitis, the clinician may be seriously handicapped and embarrassed if he depends too implicitly upon the x-ray findings in gall-bladder diseases. It is true that this agent will reveal the presence, at times, of gall-stones—but that is rather a disadvantage than an aid and for this reason: the rays rather emphasize the calculous element in gall-bladder disease, so that for years every one with gall-bladder disease or liver disease was exposed to the rays and if calculi were not evidenced, the operator imagined that the patient's gall-bladder was not affected.

Again, if the presence of gall-stones is detected we are only cognizant that this secondary condition exists, can we with the x-rays see the infection which, after all, is the medical entity engendering these stones? The great density of the liver allows often of little or no interpretation of the dark shadow cast. In this way the rays are of no value for detecting a soft stone, or inspissated bile, or to show the existence of a papillary cholecystitis, etc.

Of itself, the x-ray is anything but dependable in attempting to establish the diagnosis of a renal or ureteral calculus. The plate not infrequently shows a shadow which is interpreted as a stone, but no calculus is to be found at operation. That is the experience of the best genito-urinary surgeons. No shadow may appear upon the plate, and yet a stone of large size be found upon operation. The error in interpretation can only be eliminated by a thorough study by aid of the cystoscope.

We would not desire to minimize the value of or in any way underestimate the important data to be obtained in a careful study of Roentgenograms; but we do emphasize the absolute futility of placing much confidence in this accessory to diagnosis, in the differentiation of abdominal affections.

In this brief résumé of an all-important subject, it seems well to conclude with the statement that such errors as have just been tabulated are best minimized when "one-man opinion" is relegated to the realm of forgotten things. In a number of hospitals (and that of the Mayos is a conspicuous example) team work, or the concentrated efforts of several minds devoted to study of each particular case, leads to greatest efficiency in clinical diagnosis wherein a high degree of perfection is attainable.

Laboratory methods, the x-rays, the cystoscope, etc., are adjuncts in the making of the first diagnosis. Another clinician now handles the patient, examines all the collected data and weighs the evidence. If necessary, still another clinician is called to study the case and consult with his confreres diagnosing the case. In this way important data that may have been overlooked are brought forward, and errors of judgment are less likely to cloud a diagnosis if two or three trained clinicians give utterances to an expression of opinion rather than if just one surgeon depends alone upon his diagnostic powers. Team work in surgery has come to stay. One wonders why this correlation of scientific minds was not thought of long ago.

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1. and 2. Eusterman, G. B., J. A. M. A., 1915, lxv, 1500-1503.
3. Nuzum, J. W., J. A. M. A., 1916, lxvi, 482-485.
4. Foss, H. L., Annals of Surg., 1916, lxvi, 39-47.
5. MacCarty, W. C., Amer. Jour. Rœntgenology, 1917, iv, 67-73.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

VINCENT'S INFECTION

Dr. J. M. Douthett

Vincent's angina or Vincent's infection is sometimes called "Trench Mouth," from the frequency of its occurrence in the trenches during the World War.

Prior to 1914 this disease was very rare, both in Europe and in this country, but during the war it was very common. In one camp 500 cases became infected in 10 days, and many outbreaks occurred on convoys and in camps in the different zones where large numbers became infected before the diseased ones could be isolated. One active case can infect a large number of people who happen to be associated closely, and in a very short time.

SYMPTOMS

Vincent's disease may present different clinical appearances. It may appear on the tonsils and palate as a deep ulceration; on the ramus of the jaw, posterior to the last tooth, as a localized ulcer; as a general mouth infection involving the entire mucosa, including the tongue at times, or it may be limited to the gums. It rarely attacks the cheeks and lips.

The infection is in patches, with painful sloughing ulcers, often adherent to the membrane. The ulcers may be superficial or deep and very destructive, covering a large area. When the false membrane is removed it bleeds freely, and quickly re-forms. Sometimes the ulceration persists until gangrene sets in, with destruction of tonsil, palate or gum. Pyorrhea is often present, and quinsy is not an uncommon complication.

The general effect upon the system is often severe, probably from the abundant absorption of toxins. Recurrence may take place several weeks after the first attack, in which complications, such as, nephritis, gastro-enteritis, bronchitis, endocarditis, etc., are more liable to occur. One attack does not confer immunity. It is a common condition and we will find it more often than we think, if we look for it. Every case of gingivitis is to be suspected.

CAUSE

The cause of the disease is the bacillus Vincenti, or fusiform bacillus which was discovered in the tonsils and throat by Vincent of Paris in 1896, associated with the spirillum or spirochete, and these organisms are to be found in the lesions of the throat or gums.

TREATMENT

Chromic acid crystals, barely deliquesced with a drop of water in a porcelain or glass vessel and the end of a wooden applicator wrapped with absorbent cotton and saturated with this strong solution and pressed tightly against the parts for a few seconds. The patient is instructed not to swallow until after he gargles with an alkalin solution, preferably sodium bicarbonate. The operation is not painful, and if the ulcer is not healing another application may be made in three to five days. Usually one application suffices, except in cases of deep ulceration of the gums and between the teeth.

The particular value of chromic acid is due to its oxidizing power. As soon as the lesion is freed from the organisms recovery takes place.

REPORT OF CASES

Three cases occurring recently serve to illustrate the efficacy of this course of treatment.

J. H., aged 19, referred by a dentist on September 19, 1921, gave a history of a sore mouth since July, when he was camping. He had been treated by his family physician and his dentist with local applications of iodine and gargles, but his condition had steadily grown worse until he could not masticate solid food and could hardly swallow liquids. His gums were ulcerated on both sides around all the teeth, both above and below, with a large ulcer back of the last lower left molar and on the left tonsil. The disease attacked the gums first and spread to the throat later. The fusiform bacillus and spirochete were found in smears from the ulcers. On account of the large area affected, one side was treated at one time and in three days the other side was treated in the manner above described. In one week the soreness was gone and the patient could eat without pain. Several places between the teeth needed second applications of the same remedy, but all cleared promptly and the patient lost his sallow appearance, increased in weight, and regained his usual healthy appearance.

Two other patients who occupied the same tent, who were suffering from the same infection in a lesser degree, recovered promptly under the same treatment.

COMPLETE DOUBLE LUXATION OF THE EYEBALLS

Dr. G. E. Curry

Complete luxation of the eyeballs is quite rare. It may occur from a growth or tumor in the orbit gradually pushing the eyeball forward until the eyelids are no longer able to hold the eyeball back in the orbit and a prolapse of the eye occurs in front of the lids. Luxation of the eyeball, however, is more frequently due to some trauma. It has been observed where a foreign body has entered the orbit at one side of the eye and completely pushed the eyeball from the socket. Such a condition has also been known to take place following a brawl in which the thumb or finger has been pushed into the orbit and the eyeball pried out of the socket. It has been recorded that insane patients have enucleated one or both eyes in this manner.

The following case is reported: J. S. aged 18, on June 19th, 1920, while looking down an elevator shaft caught his head between the floor of a descending elevator and the top of a safety gate. Beginning at the occiput, the scalp was pulled forward and torn from both parietal and the frontal bones. Both eyeballs were completely pulled out of the orbits.

The man was admitted to the hospital to the service of Dr. J. R. Brown and an x-ray examination indicated a fracture of the superior maxillary, nasal and malar bones. There was also a line across the cranium suggestive of fracture but later it was thought that this might probably be the line corresponding to the laceration of the scalp.

On admission to the hospital the patient's temperature was 100 4/5, pulse 89, respiration 22. The wound in the scalp was sutured, the eyeballs were replaced as well as possible and it was thought but a question of a few hours until the man would die. The following day the maximum temperature was 102 2/5 and on the second day was normal. The eyeballs were bulging, corneas were both clear, but there was absolute blindness in each eye. The man's head and facial wounds healed nicely; but the cornea of both eyes gradually sloughed. The patient was later able to be up and about the ward, and he remained very comfortable until July 7th (18 days following his injury) when symptoms of meningitis developed. The man was very restless, frequently vomited and had intense headache. The temperature rose to 104. This was later followed by delirium, loss of consciousness and death on July 10th.

Frederick B. Utley, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

December—January

Dr. E. B. Heckel, President

INTRAOCULAR FOREIGN BODY

Dr. Edward A. Weisser reported the following case of intraocular foreign body. Mr. C. B., aged 31, was chipping at bearings while working on an automobile, October 7, 1921. Foreign body entered cornea, cutting iris at same time, passed through lens, and x-ray showed it to be located in the vitreous, 12 m.m. back of center of cornea, 1 m.m. above horizontal meridian, and 4 m.m. to nasal side of vertical meridian. Magnet was applied, but no response elicited. It was thought that the foreign body was too far back for the magnet to draw it forward, and, because of the severe iritis, with hypopyon and great pain, it was thought advisable first to get rid of the iritis and later go through the sclera nearest the site of the foreign body. On October 29, a peculiar-looking object of some kind was noticed lying on the iris. An x-ray made the next day showed the foreign body 3 m.m. back of center of cornea, 4 m.m. above horizontal meridian and 2 m.m. to nasal side of vertical meridian. The next day an opening was made in the cornea with a keratome and magnet was applied without response. The foreign body had moved from the vitreous into the anterior chamber in front of the iris.

The patient now thinks the foreign body is babbitt, which is, of course, nonmagnetic. The foreign body has attached itself to the iris behind, where it is thought safe to allow it to remain, as the eye is quiet. The lens is entirely cataractous and there are broad posterior synechiae. The lens will be extracted later.

In discussion, the consensus of opinion was that the foreign body should be removed. Dr. Stieren thought the first radiogram faulty and that the foreign body had been hidden by exudate. Dr. Curry thought there might be two foreign bodies in the eye. Dr. Heckel believed there was a mistake in localization. He advocated immediate removal of the foreign body. By instilling eserine to put the iris on the stretch, he thought the babbitt could be lifted from the iris without tearing it; if not, a small iridectomy should be done.

"INVAGINATING" CAPSULAR CATARACT

Dr. Edward Stieren reported a case of what he termed "Invaginating" Capsular Cataract. The patient is a 50-year-old man, with vision of 1/40 in the right eye and hand-movement-at-two-feet in the left eye. The left eye is much more prominent than the right and converges. This eye was injured in infancy by a cow's horn. The exterior of the right eye is normal and the pupil dilates readily and fully under homatropin. With the ophthalmoscope and by direct illumination, the anterior capsule is completely opaque with the exception of the outer upper one-fifth of the lens. The posterior capsule is similarly affected, except to a greater extent, the opaque capsule covering practically six-sevenths of the posterior lens surface. Atropin and dionin have been used persistenly for the past six months without any appreciable benefit, except that vision is slightly better due to the enlarged pupil. The left eye had about 26 D. myopia.

In discussion, Dr. Stieren asked the question whether the patient should be subjected to the risk of operation upon his one useful eye, which permits him to follow his occupation with present reduced vision. Drs. Heckel and Smith answered in the negative. Dr. Weisser proposed a preliminary iridectomy.

ORBITAL TUMOR

Dr. Edward B. Heckel exhibited a case of orbital tumor in an adult male which was being reduced by x-ray treatment. Dr. Stieren stated that, from palpation of the mass, he believed the tumor to have arisen from the upper, inner wall of the orbit. He advised x-ray pictures for diagnosis and urged an exploratory operation inasmuch as the nature of the tumor is uncertain.

CONGENITAL STENOSIS OF NASOLACRIMAL DUCT

Dr. J. B. McMurray reported two cases of congenital stenosis of the nasolacrimal duct, with spontaneous recovery. Both cases had only one eye involved. The condition began when the patients were two and three weeks old, respectively, with epiphora, which was incessant and which turned into a mucopurulent secretion following an acute inflammatory attack that subsided under antiphlogistic treatment. One case was under observation for two and one-half years and the other for three years. Operative interference for the removal of obstruction, which was evident, was deferred until the patient would be old enough safely and conveniently to have the nasolacrimal duct dilated. The treatment in the meantime was expression of the contents twice daily and the instillation of argyrol in the eye. The parents were advised in both cases that the infants were old enough to have the operations, but before operation could be done, both ducts opened spontaneously and complete cure resulted. All evidence of lacrimal obstruction has ceased and the patients are entirely well after three years.

The reason for reporting these cases is to raise the question as to how often spontaneous opening of the lacrimal ducts occurs and how long one should wait for such spontaneous opening. One should be very careful in taking the history of these cases. If there has been any evidence of an inflammation of the conjunctiva in infancy, dilatation should be undertaken early, at a year and a half to two years of age. If, however, there is no history of inflammation, one can wait for three years, hoping that nature will relieve the stenosis.

A third case occured in a child one and a half years old, with the history of having had trouble in the eye since three weeks of age. The mother was sure that nothing came from the eye at that time except tears, followed in about three months with some soreness alongside the nose. When the child was examined, there was a swelling over the lacrimal sac. Pressure expressed a large quantity of mucopurulent material. Laboratory examinations gave no help; the culture contained no growth of importance. This child was treated for six months, in the belief that the duct might open spontaneously. Meanwhile, the family physician reported that the child had had an acute conjunctivitis during the first week of its life, which he thought was mild ophthalmia neonatorum. On account of this history, immediate operation was done, with complete relief of all symptoms of obstruction.

In discussion, Dr. Stieren stated that he probes under chloroform anesthesia, after three or four weeks of expression using No. 1 or No. 2 Theobald probes, with gratifying response. Dr. Krebs probes early, under general anesthesia, syringing the duct first and using No. 3 or No. 4 Bowman probes. He finds it necessary to probe only once. Dr. Smith reported one case which recovered spontaneously. Drs. Jobson and Curry advocate persistent washing out of the sac with a weak solution of zinc sulphate. Dr. Heckel expresses the secretion from the sac but does not probe in this condition, which he prefers to call dacryocystitic blenorrhea. He limits the use of the term dacryocystitis to the acute process, which is really an abscess of the sac.

ENUCLEATION IN INFANTS

Dr. Edward B. Heckel reported three cases of enucleation in infants for intraocular tumors. In infants, he does an external canthotomy to facilitate expulsion of the globe. He does not favor implantation operations and does not believe that it makes any difference in the development of the orbit whether or not implantation is done. Dr. Stieren stated that he believes that it makes a difference in the development of the orbit whether or not a prosthesis is worn.

VITREOUS HEMORRHAGE AT MENSTRUATION

Dr. Wm. C. Meanor reported the case of a married woman, aged 33, in whom hemorrhage into the vitreous occurs at every menstrual period. The hemorrhage usually begins on the second day of menstruation. The vitreous becomes so cloudy that the fundus cannot be seen, but clears up before the next period. Patient has had blurred vision during her periods ever since menstruation began. She is the mother of two children and had the hemorrhage every month during her pregnancies. There has been no epistaxis. Blood Wassermann and other tests and examinations have been negative.

Discussion

Dr. Van Kirk had a woman of 25 who had acute edema of the eyelids and cheeks lasting three or four days at every period. Also a woman of 35 who developed two or three blebs on the eyelid when she began to menstruate; these cleared up by cocainizing the terminal area of the turbinates in the nose.

Dr. Heckel had a woman with edema of the conjunctiva and lids which occured at irregular intervals; the condition was perhaps the result of sexual excitement.

Dr. Meanor had a case of sarcoma of the iris which had hemorrhage into the anterior chamber at every menstrual period.

HERPES ZOSTER OPHTHALMICUS ASSOCIATED WITH OPHTHALMOPLEGIA TOTALIS

Dr. H. H. Turner reported a case of herpes zoster ophthalmicus associated with ophthalmoplegia totalis. The patient was a retired mine foreman, aged 77. On November 14, 1921, he contracted a "cold," with development of intense neuralgic pain over the right side of the head. Several days later he developed a well-marked herpes zoster ophthalmicus. He was admitted to the Mercy Hospital on November 24, on Dr. G. C Weil's service. We found, in addition to the classical skin lesion, a complete paralysis of the third, fourth and sixth cranial nerves of the right side, an ophthalmoplegia totalis. The cornea was anesthetic, but showed no tissue involvement; intraocular tension normal; the conjunctiva was hyperplastic. Senile cataract made examination of the fundus impossible. Patient has been quite delirious at times, although since passing the acute stage the temperature curve has not gone above 100°. The paralysis of the ocular muscles is passing rapidly, but, within the past few days, there has developed at the limbus below and extending upward into the cornea an area of deep infiltration without much inflammatory reaction or pain. The case is unusual on account of the associated ophthalmoplegia totalis.

G. H. Shuman, Secretary.

PHILADELPHIA LARYNGOLOGICAL SOCIETY

THE EYE IN RELATION TO NASAL DISEASE*

DR. THOMAS W. TAIT

Considering the close anatomic and physiologic relation of the eye, with its drainage apparatus, and the nasal chambers and accessory sinuses, it is not strange that we so frequently meet with diseases involving the entire field, calling upon all the resources at our command to locate the lesion and properly treat it. It is not a matter of wonder that so much careful study and attention has been given to the subject by those specializing in either branch of work. Long ago, before the days of the x-ray and transillumination, we were all impressed with the value of nasal treatment of some kind in our cases of corneal ulcer, especially in children, the subjects of purulent rhinitis. How rapidly these ulcers cleared up after a few visits to the rhinologist, the treatment consisting, usually, of antiseptic sprays of various sorts. Transillumination and skiagraphy, these two modern methods of diagnosis, enable us to deal more intelligently with our ocular-nasal cases.

Just here, I want to emphasize the importance of washing out the lacrimal sac and nasal duct in all cases of purulent nasal affections. It is probable that violent blowing of the nose may force some of the infectious material up through the duct into the sac, causing dacryocystitis, conjunctivitis, corneal ulcer, with more or less serious consequences. Washing out the sac and duct is a simple procedure. The outfit necessary is a small Luer syringe, fitted with a curved slip-on canula. To this may be added a punctum dilator to stretch the opening into the canaliculus. The tip of the canula is pressed into the punctum, and a little way toward the sac. There is a wide range of solutions which may be used, avoiding those which are painful and irritating. One to four or five thousand bichloride or one to three hundred nitrate of silver, are valuable. A thorough study of the nose and sinuses prior to any operation involving the opening of the eyeball is wise, and I am persuaded that were this done more frequently, there would be fewer cases of panophthalmitis and enucleation. It is not a mistake but a crime to lose an eye because of neglect to learn the true condition of the nose and sinuses.

Bony and cartilaginous spurs impinging upon the turbinates may cause inflammatory eye affections which refuse to yield to treatment until the offending part is removed. A woman suffered many years with a painful eye affection occurring only during menstruation. The bulbar conjunctiva became intensely injected, the cornea cloudy, the eyeball sensitive to pressure over the ciliary region, marked photophobia, the pain so severe as to prevent sleep, night after night. Examination of the nose revealed a small, sharp, bony spur far back, the removal of which put an end forever to her eye trouble. The ophthalmologist may not travel very far without the rhinologist.

A rather curious case was that of a young girl, the subject of violent paroxysms of sneezing. Linear cauterization of the turbinates had been done, and other nasal treatment faithfully carried out for a long time, without success. The sneezing continued one hundred times by actual count, at short intervals. Finally, one day, in the course of conversation, she remarked that the attacks always began when she started to use her eyes in reading or sewing and that she had practically given up both. This history seemed to point to some refractive anomaly, faulty accommodation or muscle imbalance. She had never worn glasses. Atropine was ordered to eliminate the accommodation, and she was put through a most searching refraction. Her defect proved to be compound hyperopic astigmatism, against the rule and moderate in degree. The usual postmydriatic test was made and glasses ordered. Her report, received in due time, stated that she read a book of 85 pages at one sitting without a sneeze. She has not sneezed since. The rhinologist may not travel very far without the ophthalmologist.

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*Read at a meeting of the Society, held May 3, 1921.

Eye symptoms and diseases due to sinusitis are common, ranging all the way from eye tire to absolute blindness. A young woman had periodical attacks of dimness of vision for six or seven years. When first seen the pupils were widely dilated and not responsive to light. Ophthalmoscopic examination was negative. The discs were of normal color and without any evidence of edema. The Wassermann was strongly positive. Double middle turbinectomy had been done without any noticeable improvement. X-ray showed cloudy antra. Double antral puncture, syringing and suction released pus in large quantity, and brought relief from all her eye symptoms. Central scotomas (areas of partial or complete blindness) are observed in some cases of sinusitis involving the optic nerve. The affected area is regarded by some as due to a toxemia, by others as a compression of the optic nerve within the canalicular portion.

A case of more than passing interest is that reported by Dr. James Bordley, of Baltimore, at the meeting of the Section on Ophthalmology of the American Medical Association, and published in the transactions of the section. His brief notes of the case are as follows:

> A man, aged 56, was stricken with violent trifacial neuralgia and dimness of vision in the left eye. He was seen within an hour of the onset of his trouble, and gave a history of an attack of the "grip" one week previously. On examination, a relative central scotoma associated with choking of the disk of the left eye was found. He neither smoked nor drank and had enjoyed excellent health. Three years previously all of his teeth had been extracted. He had no prostatic enlargement. Only a few days before he had undergone a complete physical examination by a competent internest who reported him normal. Ten days before his attack, he contracted a nasal cold. This had run a usual course and subsided. I placed him in a hospital where he was subjected to a searching investigation. Roentgenograms revealed a slight clouding of the right sphenoidal sinus. He was operated on, the sinus opened and nothing found. Forty-eight hours after the operation, the patient suddenly became totally blind in and had complete ophthalmoplegia of the left eye. During all this period, he had suffered much from an intense neuralgia. The posterior ethmoidal cells of the left side were opened and nothing found. The right ethmoidal and sphenoidal cells were opened at the same time and with the same result. At the end of the seventh day the eye became slightly proptosed. As there might have been either an abscess or a tumor in the orbit, a Krönlein operation was performed. The only thing found was an optic nerve fully twice the normal size and extremely tortuous. The sheath was slit in the long diameter of the nerve, and an astonishing amount of fluid was evacuated. The operation relieved neither the pain, muscular paralysis nor blindness. Some three weeks subsequent to this procedure, the patient developed signs of meningitis and died twelve days later. The postmortem revealed a double sphenoidal sinus on the left side, the extra sinus lying immediately back of the one which had been opened. In this cell there was pus, but none in the more anterior one. There was an erosion through the posterior wall leading to the central cranial fossa. From that point there was a basilar meningitis which involved all of the vessels and nerves passing through the sphenoidal fissure and optic foramen. This meningitis was walled off, and within its confines there was a quantity of fluid under tension. It was, of course, easy to account for all of the symptoms after the postmortem.

REPORT OF A CASE OF EXOPHTHALMOS CAUSED BY EMPYEMA OF THE ETHMOIDAL AND SPHENOIDAL SINUSES

DR. MARGARET A. WARLOW

We all know that a definite connection is recognized between diseases of the nasal passages and their accessory sinuses, and eye disturbances. According to the American Encyclopedia of Ophthalmology, exophthalmos is a symptom of some underlying condition, local or general.

Among etiological factors we have extension from affections of the nasal accessory sinuses. In searching the literature I find a number of cases in which exophthalmos was caused by some pathological nose, throat or ear condition. W. C. Posey (Annals of Ophthal, p. 663, July, 1912) exhibited a child with a mild degree of exophthalmos in both eyes, which doubtless was occasioned by shallow orbits, in whom the prominence of the globes had been greatly increased by the presence of adenoids, the proptosis recovering to its normal degree after the removal of the growth at the Children's Hospital. Dr. Posey said that the literature contained many such cases and cited some reported by Holz, Spiller, and Hack. He also referred to a case reported by Battens, in which the orbital involvement appeared after an attack of tonsillitis. Posey also pointed out, in a number of cases reported in the literature, the connection with Graves' disease, and referred in particular to a girl of 17 years reported by Hack, in whom the exophthalmos had existed since early childhood. Examination revealed a marked hyperplasia of the erectile tissue of the inferior turbinals. The inferior turbinals were cauterized and the following day the exophthalmos had nearly disappeared. Also the nervous cardiac palpitation, and the size of the thyroid diminished, and a slight myopia which had been present before the nasal operation disappeared.

The exophthalmos had preceded all the other signs of Graves' disease for some years and Hack thought the excilation of certain portions of the peripheral sympathetic by the swollen tissues of the nose had occasioned the other symptoms, all being, according to him, of the nature of a reflex neurosis. He attributed the exophthalmos to hyperemia of the orbital vessels, caused by reflex dilitation of their walls and to a marked turgescence of the retrobulbar fat, which he said Michel had already referred to as cavernous tissue.

Sweet related a case of exophthalmos in which a radiograph showed frontal sinus involvement. Operation resulted in cure. Weeks has observed two cases of exophthalmos due to disease of the postethmoidal cells. The ethmoidal cells affected passed directly under the floor of the orbit posteriorly.

Colonier reports a case of intermittent exophthalmos in a girl of twelve years, who had been affected for two years with a suppurative otitis media. The child had waked from sleep with a severe pain in the right eye, which was followed by a marked exophthalmos of short duration. The ear condition was treated and the exophthalmos disappeared.

Other cases are reported in which the exophthalmos has originated from inflammations of the orbital tissue, transmitted from inflammation in the nose caused by maxillary sinusitis; also two cases in which the removal of the anterior end of the middle turbinal, allowing drainage of the inflamed frontal sinus, cured an existing exophthalmos. Another case reported was a cure of exophthalmos and third nerve palsy following an exenteration of the right ethmoid labyrinth which was full of pus.

Dr. Hurd in the *Laryngoscope* for May, 1920, reported a case of enlargement of the sella turcica in which exophthalmos was present.

The case which I wish to report, Mrs. H., age 48 years, was referred to the College Hospital by Dr. Weeks-Metzer, of Riverside, N. J., June 18, 1920.

The following history was obtained: The patient had been well until December, 1918, when she suffered for several weeks with rheumatism. She recovered and continued well for several months. On April 15, 1919, she awoke with severe pain in her head and eyes, worse over the left eye. The morning following, the left eye was bulging to such an extent that the upper lid could not be seen. She was unable to wear her glasses on account of the extensive exophthalmos and she said she was blind in the left eye.

The following day the patient went to an eye specialist who sent her to a hospital where she was examined in the eye, nose and throat department. She did not accept the advice given in the clinic and was without treatment for several months.

Four weeks following the attack on the left eye, May, 1920, the right eye began to pain and bulge, but never so much as the left. When she felt something dropping in the back of her throat, the eyes were less painful.

On admittance to the Woman's College Hospital, fourteen months after the original attack, there was marked exophthalmos of both eyes, the left worse than the right. Vision in both eyes was poor, the left being much worse than the right. She was unable to close her eyes, suffering intensely with pain in both eyes, and with frontal and occiptal headache.

She was admitted to the Medical Department and examined by Dr. Van Gasken, who found the following condition present: The thyroid gland was not enlarged. Temperature varied from 98 to 100. Pulse 74 to 90. Blood pressure, systole 112, diastole 84. The Wassermann was negative.

She was referred for nose and throat examination to Dr. Margaret Butler: Nasal chambers free in the respiratory portion. Septum deflected to the left, causing firm pressure in the ethmoidal region. Right middle turbinal presses on the septum. Mucous membrane normal in appearance. Full upper denture; the few teeth present were in a bad condition. Fauces free. Abundant purulent secretion in the nasopharynx. Posterior ends of turbinals enlarged. Exploration of sphenoid and pituitary region advised. Transillumination showed the frontal and maxillary sinuses clear. X-ray examination showed the ethmoid and sphenoid sinuses cloudy.

She was referred to the dental department where she had immediate treatment.

Eyes examined by Dr. Mary Buchanan. Exophthalmos of both eyes, the left being much more prominent than the right. Two opacities on right cornea from ulcers about three months previous. Injection of palpèbral and bulbar conjunctivae. Media clear. Discs well defined. No gross lesions in fundus. Fields cut on temporal side, left being cut to 30 degrees and right from 40 to 60 degrees. Both fields also cut a little to nasal side. Vision without glasses in both eyes 5/45. Vision with glasses, which had been fitted by an ophthalmologist fifteen months before, right eye 5/22, left eye 5/30.

The patient was suffering intensely and she was referred back to me and we decided to operate.

On examination I found the condition to be the same as that reported by Dr. Butler, July 1, 1920. I did a submucous resection, removed the left middle turbinal and exenerated the ethmoid cells and opened the sphenoid on the same side. Pus drained from the ethmoidal cells and the sphenoid.

The patient had suffered so much and was so anxious for relief that she endured the operation very well, but I thought it advisable not to open the right sphenoid and ethmoid cells at this time.

The following day the patient was sure she was much better, the exophthalmos was less in both eyes, especially in the left. The vision improved in the left eye. Patient had much less pain than previous to the operation. It was not necessary to give morphine but we gave atrophine sulphate, gr. 1/200 every four hours, unless the mucous membranes were too dry; then we lengthened the interval between doses. The atropine helped to dry the secretion, also to lessen the swelling of the mucous membranes.

Four weeks later, I removed the right middle turbinal, exenerated the ethmoidal cells and opened the sphenoid on that side. Pus was present here also, although not so abundant as on the left side.

After the second operation there was continued improvement in the exophthalmos. She was able to close both eyes, and the vision continued to improve. Later we used suction, which was helpful.

When I last examined the patient, May 5, 1921, I found only slight exophthalmos. She could wear her glasses without discomfort. She had no pus in either nares, and was relieved of the intense pain she suffered before her operations.

ABSTRACTS FROM MENTAL HYGIENE

Vol. 5, No. 4, October, 1921

BY EDWARD M. GREEN, M.D.

HARRISBURG

THE SIGNIFICANCE OF THE CONDITIONED REFLEX IN MENTAL HYGIENE

William H. Burnham, Ph.D., Clark University

Pavlov and his associates have demonstrated upon animals that a stimulus from any receptor organ, however indifferent the sensation, may become associated with a biologically adequate stimulus and produce the same response. Others have found this to be true also in the case of children. A conditioned reflex is one produced by an indifferent stimulus associated with a biologically adequate stimulus. The essential factor in mental development is the production of conditioned reflexes and systems of conditioned reflexes consequent upon the association of stimuli and inhibitions, which process has its beginning at a very early age. An individual's whole education and every act of his daily life are largely the development of conditioned reflexes from the stimuli of his environment, his behavior and methods of thinking being determined by them. Social education is a matter of acquiring inhibitions which, if abnormal or exaggerated, may be injurious to the character of the individual and responsible for the formation of undesirable habits. Such inhibitions may appear as peculiar attitudes, fears, habits, and the like which handicap the child in school and are obstacles to his adopting a normal outlook on life. Certain inhibitions of an injurious character may be removed by providing new and stronger stimuli in consequence of which a new system of conditioned reflexes becomes established. Explanation of much bizarre behavior, ridiculous speech, surprising mental attitudes, forgetting, and the like can be made from the point of view of the conditioned reflex without invoking the Freudian theory of the unconscious, although psychoanalysis has been of great service in removing obstacles to healthy mental development. The work of the teacher and that of the psychistrist as well is concerned in large measure with the breaking down of harmful reflexes, and the building up of healthful conditioned reflexes or systems of reflexes that may inhibit the injurious ones.

THE ELEMENTARY SCHOOL AND THE INDIVIDUAL CHILD

Esther Loring Richards, M.D., Baltimore

In the elementary school, with its standardized course and its large number of pupils, the individual is easily lost sight of and, consequently, the child who fails to progress and who finds it necessary to repeat his grade is apt to be considered "backward," in the absence of special investigation of the reasons for failure to advance. Some of these children are intellectually deficient, while others are merely the victims of difficulties in adjustment, which difficulties may often be corrected by proper training.

The present study concerns certain pupils in one of the public schools of Baltimore. In all, 46 children came under observation and of this number 35 had difficulty in keeping up with their grades. As the result of Binet-Simon tests 16 were found to be retarded from 1 to 6 years. The remaining 19 manifested such faulty reactions as shyness, laziness, inattention, vicious tendencies, sensitiveness to criticism, daydreaming, hypochondrical fears with resulting irregular attendance. In practically every case the first appearance of the peculiar characteristics could be traced back to the early years of school; indeed many of these unhealthy habits of adaptation were found to have begun in the home, from which they were carried over into school life.

Eighteen children, ranging in age from 6 to 10 years, were selected from the first grade for experimental study. In only one instance did the actual age and the tested age show a disparity of more than two years. Other features than deficient mental equipment appeared to be responsible for the inability of 14 to make the desired progress. After all needful data had been collected these 18 children were placed under the supervision of a teacher who had the time, patience, and skill to devote to their reconstruction. At the close of the school year the work of 17 justified their promotion, 10 to the third grade and 7 to the second grade.

The success of the experiment seemed to depend not so much upon the extra time devoted to the pupils as to the study of their individual needs and the creating of opportunities for teacher and child to understand each other. The progress made by this group of cases emphasizes the importance of using the Binet-Simon scale as a help in discovering the problems of the individual child and the danger of accepting the results of the test as final in establishing the presence and degree of mental defect.

EXTRA-MEDICAL SERVICE IN THE MANAGEMENT OF MISCONDUCT PROBLEMS IN CHILDREN

Marion E. Kenworthy, M.D., New York

The fundamental task of the social worker undertaking the management of misconduct problems in children is the determination of motives which inspire the acts in question. In order to attack these problems intellectually, detailed information should consist not only of the ordinary family, personal and social histories, but of every factor in the child's life which might tend to influence its development. The personality of the patient must be studied until a true estimate is formed of his capabilities and handicaps, as well as those of the other members of his family. Such intimate inquiries can best be made by the social worker, who may also secure from agencies outside of the immediate family important hints as to promising lines of investigation. The sources of conflict and causes of dissatisfaction which so often lead to misconduct must be recognized if reëducation of the patient is to prove successful. It is a difficult matter to elicit such information in the case of children who are ignorant of the sources of dissatisfaction or who for reasons which seem adequate refuse to divulge them. The problems of the eldest, the middle and youngest child are all different and each may lead to misconduct, while the question of sex often gives rise to mental conflicts which may result in behavior apparently unaccountable until the motives responsible for it are recognized. These latter questions, not always understood and not always wisely handled by parents, may be discovered and best managed by the social worker who can educate the child in correct habits of adaptation to the realities of life. It is not always advisable to remove the patient from an unfavorable home environment for he may preferably be helped to form the habit of facing trying situations rather than stepping out from under them. It frequently happens that there must also be a reëducation of parents and other members of the family, and that they must be led to understand the causes of the child's misconduct. The social worker who has opportunities for knowing of unfavorable neighborhood settings is the one best fitted to establish new interests and recreation outlets which may displace such sources of dissatisfaction. She is in a position to assist the teacher to recognize the problems of the growing child, especially those who find difficulties in the school life, and to provide opportunities for self-expression and development of individuality. No attempt to lead the child to a better understanding of himself and his relations to the family and to his associates should be made until a careful examination of all elements which enter into the case has been completed, while at the same time the worker should be impressed with the fact that each case must be handled with due regard to the peculiar difficulties which affect the child as an individual.

MENTAL HYGIENE PROBLEMS OF NORMAL ADOLESCENCE

Jessie Taft, Ph.D., Philadelphia

Adolescence is a critical period in the life of an individual and one which tests the wholesomeness of his previous development. Some persons make the adjustments which become necessary at this time with comparatively little difficulty, while others meet with obstacles which may seem almost insurmountable, but a certain degree of stress and strain is the usual experience of all adolescents. In order to predicate what the prospects may be for the individual to pass over this period of life safely and to determine what problems he will likely encounter, it is necessary to make inquiries in regard to the development of his work and play life and also the development of his love and sex life. One must learn how the child reacts to the ordinary joys and disappointments of life, his methods of attaining satisfaction, his ability to assume responsibilities, and the channels through which he finds self-expression, also what difficulties, environmental, physical, and personal he has to contend with. The period of emancipation brings all these difficulties into the foreground and it is apt to fix more firmly the habits he has previously formed for dealing with them. His outlook on life is now entirely changed and he may shrink from the economic and social responsibilities which face him or meet them courageously and without evasion. In adolescence, too, adult love and heterosexual interests may appear as definite problems which must either be evaded or satisfactorily solved. Faulty methods of adjustment to reality will at this time become more apparent and the individual's future welfare may depend largely upon wise or unwise action of those who are in a position to proffer advice. After adolescence has been entered upon the problem of rendering the struggle less acute and strengthening the forward-looking interests and impulses is a more difficult matter in the cases of those who have failed to make the correct adjustments in their earlier years. The adolescent should meet with encouragement rather than criticism and be helped to establish the confidence and assurance necessary to approach work and love on an adult basis. He should be free to develop his own interests and to find methods of self-expression, while the need for interpretations of life, ethics, religions, philosophy, and the like should be supplied. The teacher may so equip the child that he may find pleasure in creative work and the parents may encourage economic independence and a widening of social interests beyond the family circle. "Last and most important, if we are wise enough and grown-up enough ourselves, we can give the adolescent an interpretation of sex and human behavior that will enable him to face frankly his own cravings and inferiorities, real and imagined, and to adjust to them in a positive, constructive spirit."

SUICIDE IN MASSACHUSETTS

Albert Warren Stearns, M.D., Boston

As registration reports of the State of Massachusetts since 1841 contain data on suicide, it has been possible to study the suicide rate in that state for the past 70 years. This study shows that there has been an irregular, but certain increase until at present about 500 deaths by suicide occur yearly. In 1850 the rate was 4.9 per 100,000 living persons. By 1903 it had risen to 13.9 and for the year 1920 it was approximately 13, a decrease having been noticed during the years of the war. Efforts to explain this striking increase above mentioned have not proved entirely satisfactory, although a relation does exist between certain factors and the number of suicides. Census reports show that during the years covered by this study there was a distinct increase in the urban population and as suicide is most frequent among city dwellers this movement to the larger centers of population is probably a factor in the higher suicide rate.

There appears also to be a correlation between the divorce rate and suicide. In the year 1870 divorces per 100,000 of general population in Massachusetts numbered 26, while in 1918 this rate had risen to 60.2. The change in public opinion as regards suicide must also be considered as a factor in weakening the restraining influence which it formerly exercised. There appears to be a correlation between unemployment in general and suicide, although as developed by the present study the influence of economic factors has been heretofore over-rated. It was found, too, that the greatest number of suicides occurred in the fifth and sixth decades although the suicide rate was highest between the ages of 60 and 69. As regards sex the average for the 70 years showed the ratio of males to females was as 100 to 29.5.

Analysis of the methods used in Massachusetts during the years 1916, 1917 and 1918 showed that firearms were the instruments most often employed, while illuminating gas was second and hanging third in point of frequency.

Suicide may be considered to be an expression of emotion and seems to be instinctive oftener than the result of premeditation. The emotional state is always one of depression, despair, or hopelessness, except when it occurs in connection with homicide when it may spring from blind rage based upon jealousy. Mental disease is the greatest single factor in suicide and contributes one-third of the whole number of cases. The depressed form of manic-depressive psychosis is responsible for almost one-half of the suicides occurring among the insane, while senile psychosis furnishes the next largest number. In order to prevent the occurrence of suicide it is suggested that the importance of depressive states of mind be more generally recognized, that psychological problems involved in such states be dealt with on a psychological basis and that the attitude of the public towards suicide be changed.

The general situation found in insane suicides is illustrated by a number of case reports falling under different diagnostic groupings.

THE FUNCTION OF THE CORRECTIONAL INSTITUTION

Herman M. Adler, M.D., Chicago

That correctional institutions do not enjoy the confidence and respect which is the prevailing attitude toward first-class surgical institutions is due in part to the peculiar line of development in the field of juvenile delinquency. An apparent change has of recent years been noted in the types of delinquents sent to these institutions which, if real, may be a result of the system of probation which now cares for the hopeful cases and leaves the more incorrigible to the correctional school. Through the work of the juvenile courts many children susceptible of reformation through educational and social treatment do not reach the institutions and commitments are chiefly from the number against whom the community must be protected. Such commitments are for the interests of the community rather than for those of the child. Why one delinquent must be sent to an institution while another may successfully be maintained on probation cannot be satisfactorily answered by saying that the character of the delinquencies is different nor that the former manifests a lower grade of intelligence than does the latter. Tempermental insubordination is a distinctive characteristic of the institutional case who has usually exhausted all other forms of control before it becomes necessary to commit him. The major portion of the institutional group is not responsive to group methods, generalized discipline, or to a repressive social atmosphere and it is only by individual study and individual treatment that results can be obtained. The entire energies of the staff of a correctional institution should be bent upon securing and accumulating information upon which may be based plans for effective, purposeful, and intelligent treatment. The members of these staffs should have the education and special training which will fit them to conduct such researches. The work which has already been done merely proves that intelligence, refinement, and industry will produce results in dealing with delinquent children, but has led to no discoveries which demonstrate that a favorable or an unfavorable outlook is indicated by the presence or absence of any certain qualities. The attitude of correctional institutions should be that of experiment and research rather than responsibility for cures or corrections, as through such activities only can they become the sources of preventable measures which will reduce the number of cases requiring their services.

WHAT IS A "NERVOUS BREAKDOWN"?

Alice E. Johnson, M.D., Philadelphia

What is popularly termed a "nervous "breakdown" is not an organic disease nor the symptoms of an organic disease, but as its causes and development are not well understood by the average physician his treatment of the condition is too often unavailing. Human beings are subject to the influence of two naturally opposing streams of energy; the one composed of instincts concerned in the preservation of life and the preservation of the race, while the other is expended upon the civilization, culture, and well-being of the race and of the individual. Instincts cannot safely be allowed unbridled play but must be trained to follow desirable channels. In this process of training there must exist a certain degree of conflict between the opposing streams of energy, the reaction to which may, in the case of the over-impressionable person or one whose training is faulty, be manifested by certain symptoms such as fear, anxiety, indecision, depression, and various feelings of discomfort. These symptoms are not under the patient's control but are so apparently without foundation that they are apt to arouse a suspicion of sheer pretense. They are, however, the expression of a conflict within the individual and of which he is unconscious, and are not directly dependent upon any outward circumstances.

In order to treat these conditions successfully the physician must understand the psychological mechanisms involved and next attempt to discover just what the patient's difficulties are. They may then be brought into his consciousness, together with explanations of how the symptoms have been produced and advice as to their dismissal.

INADEQUATE SOCIAL EXAMINATIONS IN PSYCHOPATHIC CLINICS

Dorothy Q. Hale, New York

Organized social work in connection with hospitals for mental disorders is now recognized as one of the most important activities of such institutions. The collection of all data concerning the patient's life and the determination of their bearing upon his situation can best be handled by the social worker who has opportunities for interviewing those who can contribute information of value and for estimating the credibility of the sources through which it is obtained. She is also able, by visiting the patient's home, to gain a knowledge of his environment which will aid the physician to form an accurate opinion as to the situation and so be in a position to suggest measures which would not have been considered in the absence of such information. Embodied in the article are a number of social history extracts which are offered for the purpose of showing how the physician may be influenced by the worker's reports and thereby be enabled to revise judgments which he may have already formed. Important factors entering into the social problems of another group of cases are also briefly stated. From a study of the records of certain psychopathic clinics it would appear that the services of the social worker are not utilized as frequently as might be desirable and that many of the cases presenting problems which might rightly be handled by her are overlooked. In many instances follow-up work was not carried out, while in others no social examinations had been made, although clearly indicated. Upon the personnel of the psychopathic clinic depends in great part the extent to which social examinations are employed, for the experienced worker will recognize the existence of social problems and bring them to the physician's notice, coöperating with him in referring to the social service department every patient who needs social care.

EUGENICS AS A FACTOR IN THE PREVENTION OF MENTAL DISEASE

Horatio M. Pollock, Ph.D., Albany

During the past 30 years the number of patients with mental disease cared for in the hospitals of this country has increased 300 per cent, while the rate per 100,000 of population has risen from 118.2 to 220.1. Based upon the statistics of the New York State Hospital Commission the statement is made that 1 out of every 25 persons becomes insane at some time in his life.

The allied conditions, mental defect, epilepsy, dependency and delinquency each demands appropriate care and so contributes to the enormous economic loss. As less than one-fourth of the insane make permanent recoveries any measure which offers promise of preventing such disorders should receive sincere consideration. Statistics obtained from the source above mentioned show that less than one-half of the cases of mental disorder give histories of hereditary taint, although the proportion varies with the form of psychosis, but prolonged inbreeding of degenerate stocks is certainly productive of many cases of mental disease. In checking the tendency toward increase of such disorders, efforts may be concentrated upon relieving environmental stresses and strengthening resistance to injurious influences, in reducing the procreation of defective stock and in increasing the procreation of normal stock. The first may be accomplished by educational measures aided by those legal weapons employed in the control of disease and the prevention of vicious habits. In the present state of public opinion it seems impossible to extend sterilization so as appreciably to limit procreation, nor is it feasible to segregate all defectives and epileptics, because of the expense and other practical difficulties. Marriage laws so framed as to prevent the union of those liable to produce unfit offspring have not received popular approval and are consequently not enforced. Finally, whatever influence can be exerted by educational measures to emphasize the importance of a sturdy stock and the dangers of a defective stock must be encouraged and it is here that the eugenic bureau may perform a great service in collecting facts and giving them the widest publicity.

MENTAL HYGIENE PROBLEMS OF MALADJUSTED CHILDREN AS SEEN IN A PUBLIC CLINIC

A. L. Jacoby, M.D., Detroit

In studying the problems of maladjusted children it is found, not infrequently, that the chief difficulty lies with the parents and that remedial treatment resolves itself into bringing them to a full understanding of the situation and advising them as to its correction. Occasionally it may become necessary to have a child admitted to an institution in order to remove him from evil home influences but, unless there is some special indication for this action, for example his being a menace to the community or in need of treatment in a particular institution, such commitment should be reserved for those who fail to respond to other measures. Many children are brought to a clinic in the hope, apparently, that some disposition may be made of them which will relieve the parents of all responsibility. It is always desirable to restore the family group, lead parents to recognize the duty which they owe to the children and by precept and example endeavor to fit them to become useful members of the social body.

A number of case extracts illustrating the ill effects of an unhappy home environment and the rôle played by vicious and neglectful parents in the development of maladjustment form the body of the report.

SPEECH DEFECTS IN SCHOOL CHILDREN

Smiley Blanton, M.D., Waukesha, Wisconsin

Through various surveys of school children in the States of Wisconsin, Missouri, and Michigan it was found that a percentage of from 2.8 to 13 showed speech disorders of some character, while after examination of 1,400 members of the freshman class at the University of Wisconsin, it was estimated that of the 2,240 members of the whole class 18.13 per cent were unable to meet the necessities of English speech. These disorders may be considered under the following heads: Delayed Speech, Oral Inactivity, Letter Substitutions, and Stuttering. Most of those cases coming under the first grouping are due to the lack of mental development, the faulty attitude of parents being responsible for the remainder. Oral inactivity is characterized by a lack of coördination of the tongue, soft palate, lips, throat and jaw. In the cases where the tongue lies inactive in the mouth one is apt to find in the family histories mention of endocrine disorder, certain food deficiency, and erratic, timid, or egoistic temperaments. When the inactivity is chiefly of the jaw and lips the trouble is usually purely emotional. Letter substitutions include lisping and lalling, the substitution of th and sh for s, l and w for r, t for k, etc. The difficulty here lies in a failure to learn the position of letters in words or an emotional inability to adjust to the necessity of accurate speech. Stuttering, which is the most serious of the functional speech disorders, is a symptom of neurotic, psychoneurotic, or more obscure trouble and the most important factor in its establishment is an inability to make emotional adjustment to life.

The fear from which the individual suffers is a fear of meeting situations in life and stuttering is here a defense mechanism. That mental and emotional conditions are the causes of stuttering is borne out by finding the same temperaments and social disabilities in other members of the family more frequently than appear in the cases of those whose speech is normal. One who attempts to correct these speech disorders must have a knowledge of the anatomy and physiology of the organs of speech, but must in addition know how poorly-controlled emotions may develop wrong types of speech and, understanding the mental mechanisms which control behavior, be able to analyze the situation and institute appropriate treatment.

EXTRA-INSTITUTIONAL CARE OF MENTAL DEFECTIVES

Earl W. Fuller, M.D., Rome, N. Y.

A report of four mental clinics established within the past two years in cities of from 20,000 to 100,000 population in the State of New York. Certain suggestions are made as to the method of organization and conduct of such clinics so as to secure the coöperation of all agencies interested in child welfare.

The report deals with the number of cases treated in each clinic, the reasons for their presentation, the agencies responsible for their appearance, and the mental states encountered. It is remarkable only in the small number of children recommended for institutional care.

NOTICE

CALL FOR VOLUNTEER PAPERS SCRANTON SESSION

The Committee on Scientific Work at its first meeting at Harrisburg, February 1, 1922, instructed that a call be issued for eleven volunteer papers for the Scranton Session of the Medical Society of the State of Pennsylvania, October 2 to 5, 1922.

(1) The subject and a brief outline of all papers must be furnished the Committee before May 1, 1922.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman*,
5321 Fifth Ave., Pittsburgh, Pa.

Dr. O. Pine queries:—Why is it that the discussions following the reading of a paper at the meeting of the county medical society are not nearly so interesting as the curbstone discussions after the meeting?

Dr. Quiz.—What is the duration of labor?

Drowsy student.—Two hundred and eighty days.

Dr. Quiz.—Poor woman! No limit to her capacity for suffering!

HOTELS FOR THE SCRANTON SESSION

The October meeting of the Medical Society of the State of Pennsylvania is not so far distant as to be forgotten for the time being. It is essential that you consider your hotel reservation as early as possible, and we are giving below the hotel rates for your convenience. By making your reservation early you will be sure of proper accommodation. Reservations should be made by communicating direct with the hotels.

Scranton's leading hotels (all European plan except the Holland), with their location and rates, follow:

Hotel Casey (400 outside rooms), Cor. Lackawanna and Adams Aves.—*Single rooms:* without bath, $2.50 and upwards per day; with running water and toilet, $2.75 and upwards per day; with shower, $3.00 and upwards per day; with tub bath, $3.50, $4.00 and $5.00. *Double rooms:* with running water, $4.00 and $5.00 per day, according to size and location; with bath, $7.00, $8.00 and $9.00 per day.

Hotel Jermyn (220 rooms), Cor. Wyoming Ave. and Spruce St.—*Single rooms:* without bath, $2.50 to $3.50; with bath, $3.50 to $5.00 per day. *Double rooms:* without bath, $4.00 to $6.00 per day; with bath, $6.00 to $8.00 per day.

Hotel Holland (62 rooms), Adams Ave., between Mulberry and Vine Sts.—*Single rooms,* $3.50 per day; *double rooms,* $7.00 per day.

Scranton House (40 rooms), Lackawanna Ave.—*Single rooms,* $1.50 per day; *double rooms,* $2.50 per day.

Lackawanna Valley House (75 rooms), Cor. Lackawanna and Franklin Aves.—Single *rooms,* $2.00; *double rooms,* $4.00 per room; three persons in room, $4.50 per room.

Hotel Marquette (85 rooms), 416-20 Adams Ave.—*Single rooms,* $1.50 and $2.00; *double rooms,* $3.00, $3.50 and $4.00.

MIDNIGHT POURPARLERS

Dr. Owen Lee Day (answering telephone at midnight's holy hour).—Hello!

Mrs. Ina Hurry.—Please come immediately to 1323 Steephill Terrace, Snobs Heights. My husband, Mr. Otto Kratt, is dying, I fear, from alkalosis.

Dr. Owen Lee Day (drowsily sparring for time).—My dear madame, I regret to be obliged to inform you that I can undertake—

Mrs. Ina Hurry.—Hang up your receiver, please. I am not wanting an undertaker.

Dr. O. Pine queries:—Why is a medical society banquet so solemn an affair? Cannot the brethren relax the professional facies?

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April, 1922

EDITORIALS

THE PHYSICIAN HIMSELF

The most pressing need of the physician is interest in his work. If he ceases to have a keen interest in his daily work he will cease to progress. His work will become drudgery and will be worth less and less to himself and to his patients. If he is then dependent on his profession for a livelihood life will become inexpressibly irksome. This should be constantly borne in mind and no opportunity should be missed to get a little inspiration or to add a little to one's enthusiasm. The profession of medicine is the most interesting of all professions but only so long as one keeps advancing. The physician must attend as many medical meetings as he can find time for and must do all in his power to give a personal and profitable interest to these meetings for others as well as for himself; particularly must he frequently visit his alma mater or some other medical center and try to keep in personal touch with interesting and inspiring leaders of the profession. After one has stayed at home for a few years continuously, plugging along ever so faithfully, it is always a revelation to realize how much one's interest and efficiency are increased by a few days passed with friends or teachers in wards or laboratory.

As regards reading, it is very important that the time which can be spent in medical reading should be wisely spent. The most profitable disposition of the doctor's time is in systematic reading of new monographs or new editions of old monographs written by men whose reputation is beyond question. The specialist and the medical editor may give their time to articles which appear over unknown names, but the general practitioner should not do so. However attractive the title he can not afford to read an article unless the reputation of the author guarantees its value. The doctor should try to look through each number of the *A. M. A. Journal*, or some substitute for it which gives abstracts of the current medical literature of the world, in order that he may have a general idea of what is going on, but desultory reading of promiscuous medical journals is to be deprecated. Have on your desk the latest edition of your favorite monograph on general medicine—Osler, Anders, Butler, Green, Edwards, French, or the equivalent—a standard anatomy, a comprehensive medical dictionary, and a few special monographs like Macleod, Lusk, Joslin, Purves Stewart, Gould's Surgical Diagnosis, Oppenheim, Lewis or Rosanoff, and put a little time on them every day, if possible. A steady application to books such as the above will give a man, in the course of fifteen or twenty years, a real foundation for medical work, a comprehensive grasp of his chosen profession, and after that any desultory reading will fit into a general structure.

While sports, pastimes and avocations—such as golf, bridge, literature, history, and the drama—are of great value in preserving mental capacity, elasticity, and efficiency, great care must be taken that these things are employed only in tonic, not toxic, doses. Whenever we become more interested in anything else than we are in medicine, or whenever we become too lazy or indifferent to master and apply for the benefit of our patients any seemingly valuable innovation in medicine we should take down our sign.

The doctor can never afford to look upon any discovery or any new method of diagnosis or treatment as too modern for him. He must, if necessary, review some of his elementary scientific branches and bring them up to date in order to grasp and intelligently apply the new principles. He cannot dodge this obligation by saying that he will refer patients who need these newfangled ideas to competent young specialists. It may be advisable to have new tests performed by specially qualified technicians but the physician must not expect under such circumstances to use the new ideas intelligently until he has mastered the principle and theories on which they depend. The same applies to the reports of the ophthamologist, neurologist, or roentgenologist. It is a grave misconception of modern medicine to say that it is getting so broad that one cannot have a general conception of the whole field. Medicine *is* becoming every year broader and more complicated and it is a harder and harder task for the older physicians to discard all that has outlived its usefulness in their armamemtarium and to re-equip themselves continually with the new ideas of approved value. The compensation for these particular difficulties is, in a way, dependent upon them, namely: the fact that medicine is and will always remain the most vigorous, inspiring, and enthralling of all the professions.

The second grave need of the physician is a growing interest in humanity, sympathy if possible, but the scientific interest of the biologist at least. Familiarity with many phases of human misfortune and human suffering may diminish so-called sentimentalities, but is must continually stimulate the interest in humanity. We must study human nature more impersonally. How often are we peeved, irritated, or exasperated by our patients. We seem to forget that they come to us because they are out of order and that irrability is one of the first signs of disease. Can we imagine Darwin becoming irritated or exasperated at the animals whose physiology and psychology he was studying?

The doctor is in danger of developing a sort of student's myopia in his diagnostic habits. He may get in the habit of examining too narrow a field, or his eye may become crossed from standing too close to his patient. It is very easy to become absorbed in establishing the verity of the first inspiration that has come to us in regard to a case under consideration. The physician must frequently step back and study his case from a distance, just as the painter does the canvas upon which he is working. He must accustom himself to broad perspectives and must study the art of long distance diagnosis, or inductive logic as applied to signs and symptoms. In the prolonged management of every case the physcian in charge should frequently review the case in its entirety to avoid most embarrassing and provoking situations.

The internist must ever be on the alert lest the undertaker call his attention to a large pericardial effusion, an empyema, or other probable cause of a sudden and apparently inexplicable death during convalescence.

The surgeon, that his patient may not die of a condition which could have been easily remedied but which was impossible of diagnosis without an exploratory operation. The vital question may be, not the probability of a certain definite diagnosis but the possibility of grave danger from delay.

The laryngologist must not neglect the yellow stains on the fingers, nor the gauze stockings and paper-soled slippers in searching for the cause of an obstinate cough. Laryngologists, as a class, are apt to smoke to excess and cough all winter and try to overcome the effect of tobacco on their patients throats with swabs and nebulizers.

The orthopedists in their "mild Philistinism" must not be too independent of the x-ray or neglect the routine blood examination, including the Wassermann.

The ophthalmologist may be reminded that he is not alone concerned with the care of the patient's vision, but that he is often responsible for the recognition of the first signs of serious conditions remote from the eyes, and which are offered to him alone; and that he is often lax in not observing and recording these signs (such as tubular fields, diminished fields, dyschromatopsia, slight degrees of optic atrophy, or papilledema) on every examination..

The heart specialist rarely learns, this side of senility, that it is cardiac efficiency that is his principal concern, and not the interesting but often inconsequential phenomena of auscultation or cardiography.

We need more painstaking thoroughness in thought and deed. Uncover the patients, turn them over, turn them inside out, figuratively speaking. Thus we pass from long distance diagnosis and broad perspectives to that which is equally important: exhaustive regional examinations and intensive laboratory studies, rectal and bimanual pelvic examinations in all obscure cases, stripping and careful examination of heart, lungs, and abdomen in all cases, investigations of the eye grounds, the ears, and the nervous system in all doubtful cases.

Just a word about neurology: It is by far the most exact, the most scientific of all the medical specialties, with the exception of ophthalmology. It repays in a most satisfying manner any time that is put upon its study. The general principles are much simpler than is commonly supposed and there is no excuse for a large proportion of general practitioners to regularly sidestep the obligation of making a neurological examination in a considerable proportion of their cases. This, of course, includes the diagnosis of brain tumors. The fact that so many brain tumors develop to a stage in which they are practically beyond help before they are sufficiently recognized to pass them up to a specialist is one of the greatest opprobriums of our profession. At Johns Hopkins Hospital brain tumors rank third in frequency, tumors of the breast and uterus only surpassing them.

We must not lose interest in cases that seem to be indubitably going against us. We must continue to observe, to record, to prescribe and to encourage. Let us not forget that we have an obligation to relieve suffering whenever possible, which is equal if not paramount to our obligation to conserve life or efficiency. Even if a patient is beyond hope, although it is too late to do him any good it may not be too late to advance medical knowledge for the benefit of other patients. We have a grave responsibility not to miss such an opportunity.

L. L.

THE ANATOMY ACT OF PENNSYLVANIA

It seems that every once in a while someone with an ulterior motive, attempts to alter by legislation the Anatomical Act, so that the medical profession always must be on its guard to thwart such vicious legislation. It is well to remind the younger generation that the advantages they now so easily command were not always possessed by students, and to recall the severity of the struggles whereby the reform was brought about.

It is also of interest to know how the victory was gained over profound superstition and ignoble prejudice. A knowledge of anatomy is, of course, the basis of all medical and surgical knowledge, and it is hard to believe that it was only about fifty years ago that the community had so little appreciation of its own duty and self interest as to make it a crime to secure such knowledge. The American profession owes a great debt of gratitude to Dr. Wm. S. Forbes, who was then Demonstrator of Anatomy at Jefferson Medical College, Philadelphia, and who later became Professor of General, Surgical and Descriptive Anatomy, for his heroic advocacy of the reform which has been of such incalulable benefit to medical science and progress. This debt is emphasized by two facts:

1. His part of the work, the most fundamental and important in the history of the profession of Philadelphia County, if not also of the State and of America, has been so little recognized that in a so-called history of medicine in Philadelphia, published not many years ago, the whole subject is not even alluded to.

2. Following, and partly at least as a result of the anatomy act, Dr. Forbes was subjected to an atrocious martydom and unjust lawsuit, which came too painfully near the most tragic ending. Too much credit cannot be given to Dr. Addinell Hewson, Secretary of the State Anatomical Board, who was associated with Dr. Forbes for a number of years, and who has safeguarded the Anatomy Act most jealously and zealously.

F. C. H.

DISEASES OF THE HEART

Dr. Eugene Lyman Fiske has furnished us some recent data, taken from the study of many thousands of heart cases accumulated by the life insurance companies, which are of interest to physicians and carry a valuable lesson.

Insurance statistics show that mitral regurgitation without hypertrophy gave an excess mortality above the normal of 65 per cent. Mitral regurgitation with hypertrophy showed an excess mortality of 105 per cent. Mitral regurtitation with a history of rheumatism showed a mortality figure of more than 200 per cent above the normal. Even functional murmurs at ages over 40, showed a substantial extra mortality.

While the tendency of the profession in recent years has rightlv been to emphasis the danger of the myocardium in heart prognosis, rather than valvular diseases, we must not forget that diseased valves cause an impairment not to be treated too indifferently. Of course, while even a persistent heart murmur unaccompanied by any secondary sign is not sufficient grounds for condemning a patient to an early death, we must recognize the value of statistics on large numbers of these cases as gathered by life insurance companies.

While the period of compensation may be long, its exact limits are indeterminable. We each know many instances of healthy people, leading active and healthy lives and even living to old age without symptoms of heart failure, but these individual instances must not make us indifferent to the results in the many thousands of cases gathered by insurance statistics, and we must accept as conclusive that these lesions that we regard as minor defects, do shorten life in the mass and should be properly safeguarded.

J. B. McA.

EX LIBRIS MEDICI

THE SENSE OF DEATH

The book that had been left upon our desk in our absence, was dated 1916, was by Paul Bourget, and was entitled *"Le sens de la mort."*

"The Sense of Death." Pecular title! It was late in the afternoon, the office was empty, there was little likelihood of anybody coming in; so we settled back in a near-by chair, usually occupied by company, rolled up the shade at the window, and decided to run through it.

The writings of Bourget are always sombre, and this was no exception. It was extremely depressing at the start, but fascinated us as we progressed, and in anxiety to see how the interesting situation was terminated, we continued, forgetting that we were reading a foreign language, and also forgetting that we were expected to meet friends at the club.

Michel Ortègue, a Parisian neurological surgeon of international reputation, a scientist, an atheist, aged fifty, is the husband of a beautiful and devoted young wife of about thirty, with whom he is deeply in love, and of whom he is a little jealous.

At the time the story opens, the World War has just broken out, and Ortègue has succeeded in opening a hospital for the treatment of wounds of the nervous system, in Paris, where he impatiently awaits the arrival of injured soldiers for whom he knows his skill will be a saving blessing.

But just at this time, when he is at the zenith of his reputation and about to begin his most important work, he begins to manifest signs of illness, distraction and anxiety that is soon communicated to the members of his staff. As jaundice is added to his other symptoms, there is soon no means of concealing the fact that he is ill, though he does his best to dissemble, and lead his associates to believe that it is catarrhal and of small importance. One day in a burst of confidence, he takes his most competent and intimate subordinate into a corner of an examination room, and lying down upon a couch, passes his hand over his abdomen, letting him feel a greatly enlarged and nodular liver, and calling attention to a dilated gall-bladder, pointing out that this sign of Courvoiser-Terrier was proof that he was suffering from cancer of the head of the pancreas, and concluding with the words, "I am lost." He also tells him that he has a metastatic tumor of the spinal column that causes him infinite suffering, for which he is compelled to take increasing doses of morphine.

So he discovers to this friend upon whom he can rely, that at fifty, rich, celebrated, at the beginning of his greatest usefulness, with a wife whom he adores, he has but a few months to live, all of which time must be full of suffering. It is told with anguish; it is like the cry of Job. If there be a God in heaven, why should he treat him thus? But he has no belief in God, and has persuaded his wife that science is the one great thing, and beyond this world there is nothing.

The first case arrives in the hospital, and with frenzied enthusiasm he makes a brilliant diagnosis of bullet in the spinal canal at a definite altitude, and then, with the announcement that he will perform a miracle, and make the now helpless man walk again, performs a brilliant operation, extracts the bullet, found exactly where he said it was, and wins the applause of his associates.

Marcel, the assistant to whom his condition has been revealed, has been sworn to secrecy and under no circumstances would betray the trust, but the truth will out, and although everything is done to conceal the condition, from the wife especially, the day comes when she finds out.

Increasing icterus, decreasing strength, failing intelligence have been observed by all, but when he takes little morphine he is bright and capable still.

One day, after one of the great battles, wounded men arrive at the hospital, and he is called upon in their behalf. He, who was once so alert, so strong, so self-reliant, now hesitates to operate, and postpones beyond the period when assistance can be of much avail. At last, when it is clear that if not relieved by operation, a patient must die, he undertakes a difficult case, after making one of his usual brilliant diagnoses. Unexpectedly, in the midst of the operation, he collapses, and handing the scalpel to Marcel hurriedly leaves the room to lie down.

Some time before he had made up his mind to die when the moment came that he could no longer endure the pain, and when his usefulness should be at an end.

In the present crisis, a word from Marcel, and intuition for the rest, enable Mme. Ortègue to divine the truth, and she seeks his side overflowing with love and sympathy.

Not long afterwards Marcel, going to the room to make a report, is arrested at the door, and unintentionally hears the beginning of a conversation to which he at first tries to close his ears, but which so fascinates him that he remains to its end, and so becomes the depository of a second great secret.

This is, in part, what he overheard:

"But, if you die, I will not live, I will die too."

"Nay, my poor child, you shall survive me; it is only right; you are not yet thirty years old. You have a right to live."

"Not without you."

"Do not speak thus; do not tempt me! I have had the terrible thought to take you away with me into the dark, the cold, the infinite space. Since I have known myself to be condemned, not once, but twenty times, I have gotten up in the night to listen to you sleep. I heard your fresh, regular breathing. I lit a candle, hiding it with my hand so as not to awaken you, and saw you so beautiful, so young! Ah, that word youth, what a word! I could see you in one year, two years, ten years, fifteen years, always beautiful, and I so far away! I said to myself, I shall be but a phantom. She will forget me."

"Never," she said wildly.

"Yes," he replied not less wildly. "One forgets everything—and then it was desperation, jealousy, fury. I thought, if I kill her there while she sleeps, without her knowing it? I only had to choose the means. There are so many powerful poisons! I have them there! And then horrified at myself, I knelt beside your bed and begged for pardon. You do not suspect how much I love you. It is not death that frightens me. Death is only mysterious to those that are ignorant of it and have not seen it. I know well that it is only profound sleep. But Catherine, to enter upon it and leave you! To leave you to others! But why do I tell you this shame, this cowardice? I horrify you!"

"But you do not know how much I love you," she said.

"Ah," he said, "but you cannot always love me. One does not love a dead body such as I shall soon become. When I look in the mirror and see this sinister mark, these wasted cheeks and this greenish color, I understand very well that no one can love me any more. One cannot. It is all over. Until this morning, I had the right to think—'intelligent as she is, and daughter of the scientist that was her father, she can still find in me something to satisfy her—my talent, my science, my work in this hospital where I am so much admired—and she can be proud of me, and proud to bear my name.' Because of it I supported myself during these recent weeks. Let me bear witness of this as I would to a dead man. But it is all finished now. Since my failure of this morning, I dare not touch an instrument again. I am too much afraid to be a murderer—I should be one, perhaps, if Marcel had not succeeded. So, science, art, everything is gone. It is a terrible thing, you see, when all that one has loved goes, slips away, is lost, and to see it, to feel it and to go with it—and into what death."

The conversation continues at considerable length, and the unwilling auditor hears the climax:

"Other women have dreamed of being mothers. I might have been by you. It would have made me very happy, but I have not been, and I do not regret it. But if you do not think so just at the time you most need me, what is it that you want me to become? For what do you want me to find strength? If I cannot aid you in this last experiment, everything is at an end. But I shall support you, I shall aid you"—and then she said wildly, "you thought of killing me?"

"I said so."

"You also thought of killing yourself?"

"I have thought of it."

"Very well. Shall we die together? Will you believe then that I love you?"

"Is it true?" he asked.

"It is true," she said.

So the suicide pact was completed, and he cried in ecstasy:

"Yes, now I believe that you love me. Thank you, thank you! For the first time in weeks I escape from my nightmare and breathe and feel more easy. Yes, I feel that you love me now, and it is sweet. How it calms and soothes me! To have spoken thus, how you must love me!"

And then she proposes that they die at once, without any loss of time, but he is not ready. There are still some things to do. He will die, they will both die, they will die together, but not yet, not until the appropriate time arrives; and when he shall give the word, she will be ready.

And now, Marcel, in possession of the secret, watches daily for events with the avowed intention of frustrating this monstrous purpose, if possible, and the days fly by and nothing happens, except that Ortègue becomes more yellow, his mind more and more confused, his body more and more enfeebled as he consumes more and more morphine to ease his pain—always taking the drug with caution.

But during this interval other things are happening, and the woman so strong of purpose, so willing to accompany her husband upon his long journey, so careless of life, and so full of sympathy, becomes subject to unexpected forces. The war continues; more soldiers are brought in wounded, and the work of administering the hospital falls upon her shoulders and is magnificently carried on. Interest in the work of Marcel as the successor of her husband grows. There are many things of importance to do and much to live for. And then Le Gallic appears. He is her cousin, an old lover and admirer of childhood days, who deeply religious, intensely sentimental, fought with zeal in this war to save France, and now is brought back with a bullet in his brain. Had Ortègue been at his best, he might have removed that bullet, but in his incompetent state, he dares not, and conceiving a violent prejudice against Le Gallic because of a supposed affection for Catharine, he prevents any one else from operating upon him. But the wounded man is above reproach in his deeply religious thoughts, and uplifts and inspires all about him by a saintly grace in suffering, refusing any remedy for alleviation, believing that it is right for those that can to bear up for the sake of the example to those that cannot. Once Ortègue heard him utter this brave sentiment, and conscious how he, himself, is more and more depending upon his morphine, conceived a bitter hatred for him, and positively refused to permit Catherine to enter his room.

And thus as time slips by, various interests develop and the words of Le Gallic and of the Abbé Courmont, the chaplain of the hospital, begin to awake in her mind the religious instincts so long suppressed. Little by little the promise of death palls upon her soul, and she becomes terrified at the thought. Finally, unable to sustain it any longer, she rushes away to their residence, abandoned during the hospital activities, to be alone, and there in revulsion of feeling, she determines to write what she cannot say, and ask her husband to release her.

It is interesting to see how the author brings out the fact that she is all unconsciously watched by Ortègue and Marcel. The former, lest this very feeling should arrive, the latter hoping it would so that he might be able to interrupt the proceedings. Therefore, the former, not knowing just what he is doing, sends the latter to the house to find her and see what is happening.

There Marcel finds her, and partly by strategy and partly by force, obtains the following written expressions:

> "I have promised, and my courage fails me. I sincerely believed that to love was my whole life and being. I said so but it was not true. I believed that if he died, it would be the most natural and inevitable thing to die with him. It seemed that if he carried me away I should not exist any more. It was my soul torn from my body. I could not imagine the pain of the loss. It was too atrocious. I could not. I imagined the emptiness, the inanity of my being separated from him, of my eyes deprived of light, of my heart deprived of blood. He had so penetrated and dominated me! His voice, his look, his spirit were infused into me, and made me a new creature. This regard so warm, so vivifying, so full of light—this voice, a little bitter, seemed to me that of intelligence and passion—this indefatigable spirit whose audacity carried me away, intoxicated me with confidence—but it was nothing more than that. I was nothing but the impression and reflection of you. I never thought, as so many other women do about my own face or my own body that you loved so much. When I closed my eyes, yours still glittered under my lids and possessed me.
>
> "Michel, Michel, is our love defeated? I am afraid of you now. I suffer shame and indescribable agony. From day to day, from hour to hour it seems to me that you are escaping, that you are withdrawing from me, that my existence is separating and re-forming. I desire other things than you. I want air, and light and space where it is good to walk. I want to communicate ardor to these people who fight. I want the thanks of the wounded for whom I do well. Oh, Michel, I want all that even without you!
>
> "Michel, but I shall never dare to speak to him again. How he will despise me! Would he ever abandon me in danger or suffering? And if I see that I abandon him—I fail on that horrible road upon which he advances from day to day, and from hour to hour—he must go on, he cannot stop, poor man! There is no one in the world, but me that can aid or support him, going with him and lying near him in the tomb.
>
> "Oh, Michel, I cannot. I have promised too much. Deliver me! If you require it, our bodies shall be united in the coffin, but our souls shall be separated before death. The test is too terrifying; it crushes me. It crushes my love. Let me live! Tear me, wound me, but I want to live. I know that I shall always be miserable after the splendid years during which I have been known by you. Oh, if I could hope with you to cross the threshold of the other world, if we could continue our love in heaven or in hell! But death, that is the end of everything. I beg you, Michel, the flower you loved, let it—"

The confession secured, finds its way into Ortègue's hands. He at once sends for her. The time has come. He will dominate her, overcome her fears, win back her love, carry her into the eternal sleep with him, and he prepares the poison.

But the other, Marcel, delays her coming, and believing that she will not come, and consumed with anger, malice, and despair, Ortègue takes the poison and dies before she at length does come.

But she is not without the remorse that may be expected, and lives only for the moment, intending to carry out the pact, and meet her husband in the land of shadows. To this intent, she obtains a bottle of cyanide, and hides it in her handkerchief, where the ever watchful Marcel observes it.

At the bedside of the now dying Le Gallic, who has been made a confidant, she hears the words of grace and peace; is urged to live for others, for her work, for France so smitten and so torn, and as she leaves his pillow as his eyes close in death, Marcel gently takes the bottle from her hands with the question, "Will you live?"

And she answered, "Yes."

The deeply religious spirit is awakened, and she returns to work with energy, and with fruition.

> "When we feel that God is farthest away, we find that he is most near."

Dr. Phys.—I shall now receive from the students present any inquiry of scientific interest.

Student from Seminary County.—Do you believe that man has descended from the monkey?

Dr. Phys.—Most emphatically, no! (Great consternation in scientific row). I believe that man has ascended from the monkey. (Scientific row convalesces).

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

A "SHOW ME" MEETING

The 1922 Session of the American Medical Association convenes in the "show me" state, May 22nd. The scientific meetings and exhibits will be of the usual high standard, and the transactions of the House of Delegates promise to be of unusual interest. Criticisms, well directed and otherwise, frequently sting to action certain large and slowly moving bodies, and the "show me" attitude of many component societies of the American Medical Association will, undoubtedly, lead to strenuous efforts to solve certain problems of legislative and economic character.

St. Louis is an ideal convention city and centrally located for many members of the Association, who feel that points on the Atlantic and Pacific coasts are rather remote for their attendance.

The Medical Society of the State of Pennsylvania will, as usual, be represented in the House by a full delegation.

The 1922 activities of the American Medical Association will be reflected in the meeting of our own Society at Scranton, October 2-5, 1922. We have had the good fortune to secure from Dr. Frank Billings, of the Board of Trustees of the American Medical Association, a promise to address our opening General Session.

Experienced attendants upon the annual meetings of the American Medical Association, and of our own State Society, have already made hotel reservations.

MEDICAL DEFENSE

During the first twenty-one days of the month of March, applications for medical defense in alleged malpractice suits were received from three members living in widely separated sections of the state. In one instance, the alleged malpractice occurred during an office treatment; in another, during the course of hospital treatment; and in the third, the claimant "was able to walk about town." Is there a member of our Society clever enough to avoid all the circumstances that may lead to institution of an alleged malpractice suit as the result of his best efforts? There are apparently about two thousand of our members indifferent to the menace of threatened suits. If history repeats itself, however, more than fifteen hundred of these apparently indifferent members will take advantage of the time intervening between the date of this writing and March 28, to pay their 1922 county medical society dues, and thus assure themselves for all time of adequate defense against such suits. After March 31, the good and faithful county society secretary will take up his unappreciated task of restoring to good standing those members who have by their own carelessness deprived themselves of medical defense and other material benefits of membership in the Medical Society of the State of Pennsylvania. In the May number of the JOURNAL, we will publish in full the March 31st data on per capita tax receipts. There will be several surprises and considerable increase in the number of societies entering the coveted 100% class.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to March 15:

ALLEGHENY: *New Members*—Frank A. Evans, 906 Maryland Ave.; Benjamin Weiner, 5200 Butler St.; Susan R. Offutt, Westinghouse Bldg., Pittsburgh; Richard P. Wyant, 2812 Walnut St., McKeesport. *Transfer*—William E. Hart, 1100 Westinghouse Bldg., Pittsburgh, from Washington County. *Death*—Jesse S. DeMuth (Bellevue Hos. Med. Coll., N. Y., '97), of Pittsburgh, Feb. 21, aged 50.

BERKS: *Resignation*—Charles Roland, Reading. *New Member*—William L. Heister, 314 So. Thirteenth St., Reading. *Removal*—Lt. John G. Ziegler, from Guam to 5729 Colorado Ave., N. W., Washington, D. C.

BLAIR: *New Member*—Charles W. Delaney, Altoona Trust Bldg.; S. Paul Taylor, 1107 Thirteenth Ave., Altoona; James W. Hershberger, Martinsburg. *Transfer*—George W. Krumbine, Asheville, from Cambria County.

BRADFORD: *Resignation*—George H. B. Terry, Washington, D. C. *Removal*—Russell H. Person, from Burlington to Athens.

CHESTER: *Death*—Ellwood Patrick (Univ. of Penna., '80), of West Chester, Oct. 29, aged 66. *Transfer*—Katherine S. Hall, R. D., West Chester, from Montgomery County.

DELAWARE: *Death*—William F. Lehman (Jeff. Med. Coll., '83), of Chester, March 3, aged 63.

JEFFERSON: *Reinstated Members*—Edgar L. Hughes, Helvetia; J. Miles Grube, Punxsutawney. *Transfers*—Walter Dick, of Brookville, from Philadelphia County; Samuel R. Huff, of Eldred, to McKean County.

LEBANON: *New Member*—Frederick S. Kauffman, Lebanon; Agnew F. Frankhauser, Myerstown.

LYCOMING: *New Member*—H. F. W. Flock, Williamsport Hospital, Williamsport. *Removal*—Franklin

J. Norris, from Waukesha, Wis., to State Hospital, St. Peter, Minn.

Luzerne: *Death*—Charles A. Long, of Muhlenburg, October, 1921.

McKean: *New Member*—Joseph A. Kervin, Bradford.

Monroe: *New Members*—John H. Stearns, Delaware Water Gap; Robert R. Gerhart, Stroudsburg.

Montgomery: *New Members*—Robert W. Randall, Royersford; Joseph E. Beideman, Norristown; Roscoe Z. Cope, Hatfield. *Resignation*—William H. Imhoff, Holmesburg.

Northampton: *New Members*—Kenneth W. Kressler, 939 Washington St.; Thomas H. Powick, 1351 Washington St., Easton; David H. Keller, Bangor.

Perry: *Death* — Elizabeth Reifsnyder (Woman's Med. Coll., Phila., '81), of Liverpool, Feb. 4, aged 63.

Philadelphia: *New Members*—Henry L. Bockus, 4942 Hazel Ave.; Louis Brody, 633 Vine St.; J. Alexander Clark, Jr., 2111 Locust St.; Joseph A. Daly, 2329 N. Howard St.; Harry G. Esken, 2517 W. Allegheny Ave.; William W. Funk, 7906 Germantown Ave.; Thomas S. Githens, 39th and Chestnut Sts.; Lawrence Goldbacher, 4843 Pulaski Ave.; Joseph I. Gouterman, 1725 Girard Ave.; Swithin Chandler, 119 So. Twentieth St.; Frederick L. Hartman, 1833 Spruce St.; H. Albert Holland, 8505 Germantown Ave.; Theodore Johnson, 432 N. 52d St.; James S. McLaughlin, 1502 Cayuga St.; Donald Macfarlan, 1805 Chestnut St.; Thomas J. Ryan, 5603 Thomas Ave.; Robert Shoemaker, 3d, Ogontz; Morris Smith, 2512 N. Sixth St.; J. Monroe Thorington, 2031 Chestnut St.; Edward Weiss, 1001 Walnut St.; Harman C. White, 2560 So. 68th St., Philadelphia. *Resignations*—Milton B. Hartzell, Philadelphia; Alexander W. MacCoy, Haverford; Sergeant P. Martin, Buffalo; Henry A. Smith, Philadelphia; B. Frank Walters, St. Paul, Minn. *Deaths*—Charles H. Wallace, of Philadelphia, Feb. 15; G. Alvin Hill (Univ. of Penna., '74), recently, aged 72; Joseph R. Bryan (Univ. of Penna., '89, of Philadelphia, Feb. 14, aged 58; Thomas E. Conard (Jeff. Med. Coll., '78), of Philadelphia, Feb. 13, aged 74. *Transfer*—Katherine Fricka-Wiseman, Middletown, Conn., to Connecticut Medical Society; Ray Parker, 5548 Sansom St., from Cambria County.

Warren: *New Member*—Edwin G. Hamilton, Warren.

Washington: *Death*—Joseph A. McElroy (Univ. of Wooster, O., '69), of Hickory, Feb. 22, aged 86.

York: *Removal*—George R. Perry, from Fawn Grove to Brogueville.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since February 20. Figures in first column indicate county society numbers; second column, State Society numbers:

1922

Feb. 20	Mercer	61–62	2259–2260	$10.00
	Mifflin	17–19	2261–2263	15.00
	Venango	24	2264	5.00
	Northampton	83–91	2265–2273	45.00
21	Somerset	26–28	2274–2276	15.00
	Mifflin	20	2277	5.00
	Montour	18–20	2278–2280	15.00
	Delaware	69	2281	5.00
23	Wyoming	10	2282	5.00
	Westmoreland	74–86	2283–2295	65.00
	Potter	11	2296	5.00
24	Northampton	92–95	2297–2300	20.00
	Bedford	9–10	2301–2302	10.00
	Clearfield	21–33	2303–2315	65.00
	Delaware	70–71	2316–2317	10.00
	Union	15	2318	$5.00
	Warren	1–35	2319–2353	175.00
	Mercer	63–64	2354–2355	10.00
Feb. 25	Venango	25	2356	5.00
	Mifflin	21	2357	5.00
	Blair	39–54	2358–2373	80.00
	Cambria	54–75	2374–2395	110.00
27	Mercer	65	2396	5.00
	Clinton	17–18	2397–2398	10.00
	Franklin	14–20	2399–2405	35.00
	McKean	16–23	2406–2413	40.00
	Jefferson	26–37	2414–2425	60.00
28	Bradford	32–39	2426–2433	40.00
Mar. 1	Clarion	24–26	2434–2436	15.00
2	Bedford	11–12	2437–2438	10.00
	Northumberland	47–50	2439–2442	20.00
	Philadelphia	1–1400	2443–3842	7,000.00
3	Mercer	66	3843	5.00
	Cambria	76–84	3844–3852	45.00
	Venango	26	3853	5.00
	Mercer	67	3854	5.00
	Allegheny	665–727, 729–771	3855–3960	530.00
4	Elk	16–17	3961–3962	10.00
	Blair	55–63	3963–3971	45.00
	Dauphin	89–110	3972–3993	110.00
	Erie	31–78	3994–4041	240.00
	Wayne	19–20	4042–4043	10.00
	Mifflin	22	4044	5.00
6	Mercer	68–70	4045–4047	15.00
	Somerset	29	4048	5.00
	Union	16–17	4049–4050	10.00
	Cumberland	17	4051	5.00
7	Westmoreland	87–99	4052–4064	65.00
	Montour	21–22	4065–4066	10.00
	Montgomery	107–117	4067–4077	55.00
	Potter	12	4078	5.00
	Perry	1–14	4079–4092	70.00
8	Venango	27	4093	5.00
	Dauphin	111–119	4094–4102	45.00
	Delaware	72–76	4103–4107	25.00
	Allegheny	728, 772–911	4108–4248	705.00
9	Armstrong	36	4249	5.00
	Center	11–19	4250–4258	45.00
	Dauphin	120–128	4259–4267	45.00
	Lebanon	1–34	4268–4301	170.00
	Warren	36–48	4302–4314	65.00
	Berks	82–121	4315–4354	200.00
10	Snyder	4–7	4355–4358	20.00
	Venango	28	4359	5.00
	Delaware	77–79	4360–4362	15.00
11	Mercer	71	4363	5.00
	Beaver	16–32	4364–4380	85.00
	Franklin	21–34	4381–4394	70.00
	Bedford	13	4395	5.00
	Monroe	1–10	4396–4405	50.00
13	Westmoreland	100–110	4406–4416	55.00
	Mercer	72	4417	5.00
	Delaware	80	4418	5.00
	Dauphin	129–130	4419–4420	10.00
	Washington	12, 15–96	4421–4503	415.00
14	Delaware	81	4504	5.00
	Columbia	30–35	4505–4510	30.00
	Lycoming	70–92	4511–4533	115.00
	Venango	29–30	4534–4535	10.00
	Cambria	85–103	4536–4554	95.00
	Dauphin	131–133	4555–4557	15.00
	Wayne	21–22	4558–4559	10.00
	Elk	18–19	4560–4561	10.00
	Clinton	19	4562	5.00
	Allegheny	912–987	4563–4638	380.00
	Montgomery	118–128	4639–4649	55.00
	Lancaster	1–118	4650–4767	590.00
16	Cumberland	18–27	4768–4777	50.00
	Bucks	53–66	4778–4791	70.00
	Clearfield	34–53	4792–4811	100.00
	Columbia	36–38	4812–4814	15.00
	Washington	97–102	4815–4820	30.00
	McKean	24–29	4821–4826	30.00

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalhey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—F. F. D. Reckord, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntington—John M. Keichline, Jr., M.D., Petersburg.
Indiana—C. P. Reed, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

April, 1922

COUNTY SOCIETY REPORTS

BERKS—DECEMBER-JANUARY-FEBRUARY

At the December meeting of the Berks County Medical Society officers were elected for 1922, reports of the retiring officers were received, and the retiring president, Dr. A. H. Bauscher, gave an excellent summary of the year's work, mentioning especially the fact that attendance at the meetings was good, although too many meetings were attended only by the faithful. He remarked that the attendance is especially good at programs that consist largely of discussion by the members. He urged better attendance, saying that our scientific program is a short postgraduate course, of which we should all take advantage. Dr. Bauscher also said that he was much impressed, during his attendance at the State Society session, with the importance of being alert along legislative lines, giving adequate support to the men who defend our interests in Harrisburg.

At the January meeting Dr. John Hirst gave an illustrated lecture on "Normal and Abnormal Obstetrics." At the February meeting Dr. David Nathan, of Norristown, spoke on "Hysteria," and his paper was discussed by Dr. Thos. L. Smyth, of Allentown. Dr. Nathan's paper follows:

HYSTERIA

DAVID NATHAN

In considering the most frequent variety of the psychoneuroses, hysteria, I shall not inflict upon you any of the arguments put forth by the various camps of controversy in favor of, or against the Freudian raison d'être for the various psychoneuroses: that these latter are the result of conflicts between repressions which are concealed in the unconscious or subconscious, repressions of some psychic trauma, sexual in character, which occurred away back in our buried past—when you and I were dear little boys—that these repressions come into open conflict with our conscious mind and the result is a compromise which is given birth in the form of some physical symptom, obsession, or phobia. Whether such is or is not the intrapsychic condition of affairs is metaphysical, theoretical, and need not concern us other than for academic reasons. All the psychoneuroses are best exemplified by those of either neuropathic or psychopathic makeup, which means that there are among us those whose nervous system is genetically inferior or that it is in its incipency morphologically normal, but the elements which compose it, are unstable and unable to cope with endogenous or exogenous strains. Given, then, a definitely fertile soil, one may have a kaleidoscopic mingling of all varieties, or he may have each one a perfect entity. In this case one may have one form or all forms enduring a lifetime off and on, the cure of one set of symptoms—physical or psychic—being but a remission to be replaced by another set, according to the nature of the stimulus. The neuropathic or psychopathic individual, however, is in the vast minority and yet one finds hysteria to a greater or less degree in every one of us. In sum, the hysterical case which you meet up with every day is not the inherently endowed hysteric (for *he* falls into the hands of the psychiatrist, who reckons more with his psychic makeup than with his complaints) but the patient who suffers with this or that symptom for which the physician searches this and that anatomical part for a pathology which does not exist.

Hysteria, a word more staple with the laity than with the profession, indeed of little more than of academic significance to most physicians, has during and since the war, brought many of us face to face with the protean manifestations. I will not go into the historical side of its varied career more than to mention that it comes to us with a pedigree dating back into the ages. The disease was attributed to the wanderings throughout the abdomen, and in fact throughout the whole body, of a restless womb. The older conception of the modern writers defined hysteria as a disease which was manifested by two varieties of disorders. The one showing stigmata which were permanent, the other a transient disorder, which while it might persist for a long time, was liable to be provoked or suppressed by external influences or purely psychical causes. The modern and present conception of the condition we owe to Babinski, who showed that hysteria could not do everything, that it cannot reproduce the characteristic phenomena of organic disease and that the diagnosis between the organic and the hysterical is not arbitrary or dependent upon the perspicacity of the physician. Babinski has defined hysteria as a pathological condition shown by disorders which may be exactly reproduced by suggestion in certain individuals, or can be made to vanish by persuasion. What seems to me to be an apt definition is that of Hurst, viz: "Hysteria is a condition in which symptoms are present which have been produced by suggestion and are curable by psychotherapy." These definitions cover the most important points which have been agreed upon by the neurologists of the present day.

This conception of hysteria has somewhat restored order out of chaos and more nearly made the condition a definite entity with clear limitations, whereas in former times it was regarded merely as a collection of symptoms in which each observer included such phenomena as he fancied. Sydenham said: "Hysteria imitates almost every disease which befalls mankind." Some of us are more suggestible than are others, but none is so immune that, given the necessary stimulus, he would not present hysterical symptoms. The Latin and Southern European is more suggestible and impressionable than is the Anglo-Saxon or Scandinavian and yet one meets up with many cases of hysteria in its classical form and with as profound physical symptoms among these latter. What have the emotions to do with its etiology? Many observers have investigated and proved that these have nothing whatever to do with hysterical manifestations, except as Dupré said: "Emotion being an element in the dislocation of the personality favors suggestion." Further, hysterical symptoms never appear at the moment of the emotional shock, for between an emotional shock and the appearance of hysterical phenomena there is a fairly long period, which Charcot called the "period of meditation." During this period auto- and heterosuggestion have plenty of time to get in their work. I seem to recognize a hysterical type of individual who exemplifies an emotional indifference or emotional outbursts which are strong for the moment but shallow, emotion irrelevantly expended. But this is too often the trait of the neuropathic individual who can show hysterical phenomena in no greater part than the normal individual. I never found the emotional sphere responsible for hysterical symptoms, though some individuals are better adapted emotionally to display the hysterical symptoms.

Hysterical symptoms are often the result of traumatism with or without gross injury. They may be the predominating symptoms in organic disease. I shall not go into any degree of complete symptomatology, that would be far beyond the scope of any such paper. Their cause being auto- or heterosuggestion, symptoms which can be reproduced by the will are the kind we find. These are not actually produced willingly but subconsciously. Hysteria is a form of subconscious simulation—pure fiction, but sincere.

In civilian life one sees more cases of hysteria among women than among men. Here the environment of the former, a woman being more by herself, is apt to make her introspective and attentive to herself with resultant suggestion of symptoms; whereas man is besieged with an ever changing menu of events. Again woman is more suggestible than man. Anesthesias, hyperesthesias, paræsthesias, hemipara and monoplegias, deafness, blindness, vomiting, pains, contractures and stammering are a few of the conditions met with in the realm of hysteria.

By autosuggestion is meant the suggestion one derives from within, i. e., from himself; by heterosuggestion is meant the suggestion one gets from without, i. e., from another. Anesthesia may be suggested to the patient by the physician. Searching for it produces it. Again, anesthesia may be encountered in states of hysterical stupor, where it is due to profound inattention during the stuperose period, or it may be primarily organic in origin due to nervous disease or peripheral anemia. Feeling, seeing and hearing are active processes and require an effort of the will. In order to see one must look, in order to hear one must listen, in order to feel one must attend; although active attention may not be a conscious process. Pain is increased by attention, decreased by inattention. Here one may cite the pain after herniectomy or appendectomy. Cutaneous anesthesia or hyperesthesia may result from unconscious heterosuggestion on the part of the observer searching for either form of sensory disturbance. This is especially noted in the supposed areas of cutaneous hyperesthesia seen in association with visceral disease (Head's areas). I attended during the summer of 1920, A. F. Hurst's Croonian lectures before the Royal Society of Medicine in London, on the Psychology of the Special Senses. He says that hysterical pain is a very real thing and cannot be distinguished from the pain caused by organic disease by its character, or by the absence of associated sympathetic phenomena. It may, for example, give rise to tachycardia, dilatation of the pupils, pallor and sweating, if the original organic pain did so, because the afferent tract of the reflex paths involved offers so little resistance to impulses excited by peripheral stimuli that the latter still produce marked effects, even when they are so slight that if the patient would cease to expect pain and thus allow the normal resistance to return, they would either produce no effect at all or only an insignificant amount of pain and little or no sympathetic reflexes.

Let me give an every-day example: a patient presents himself with a bilious attack, the result of some indiscretion in diet. The primary pathological state is one of an acute catarrh of the stomach et al., a most benign condition, attended with some epigastric pain and the usual vomiting. He is treated for a few days and the pathological state has resolved, but the patient still suffers and complains of pain and maybe he still vomits. Further examination is made to discover something objective to account for the continuation of the symptoms, and by these continued examinations a cause is heterosuggested to the patient. He must have something wrong with him, or else why the examinations and perhaps treatment? Or he has seen or heard of some one else who suffered with like complaints and this other person had cancer or something else, hence it is heterosuggested to the person that he has an organic basis for the continuation of his symptoms. Again, he may neither have sought the advice of a physician nor seen another case like his, but it is autosuggested to him that one suffering with vomiting and pain in the stomach has some grave disease thereof and he responds by keeping up the symptoms. They are perpetuated either by auto- or heterosuggestion. The symptoms may be autosuggested by the remembrance of having suffered like symptoms at a more remote date when the sufferer had an organic condition which at the time was responsible. It is well to note that all organic diseases may present in the patient a large hysterical element; e. g., in tabes one very often gets 50% of symptoms which are functional and cannot in any other way be attributed to the organic parenchymatous pathology of the disease. Remove the hysterical element and the disease may, sui generis, be little disabling. Hysterical paralysis of a limb may follow some injury such as a fracture. The pain and disability at the time of injury and during repair prevents the patient from using the part. Later when there has been complete restoration of the break and healing of the tissues, the functional disability remains the same, is perpetuated by the continued suggestion of disability.

The diagnosis of hysteria presents little difficulty except in few cases where one must determine the percentage of existing organic disease causing symptoms and the extent of the hysterical element, or in cases which are borderline ones—those which may be organic cases, but lack the determining factors when the patient is seen but once. In the diagnosis of hysteria more than in many other condition it is essential that one have a good all-round knowledge of general medicine, rather than an intimate knowledge of but one branch of medicine. Many complaints in a patient with no objective findings which can be attributed to an organic basis are hysterical. Organic nervous disease gives signs which are not found in the hysterical. A patient who complains of vomiting everything he eats and who has done this for many months, and still looks healthy and is well nourished, must surely have little pathological condition of the stomach. It is most important that organic disease be excluded and this ought to be done with as little suggestion on the part of the physician as the needs of the case may demand; e. g., an examination may be made without any chance remarks which might lead the patient to believe that you have a suspicion that he suffers with this or that disease. Again, searching continuously for some symptom which does not exist suggests to the patient that he ought to have the symptom and it is not hard for him to produce it. It is easy to produce symptoms by suggestion; much harder to remove them by medicine.

The fact that the majority of diseases with both a macroscopic and microscopic pathology are rounded off in their symptomatology by hysterical manifestations, makes it the task of the physician to recognize the real, not to add to the false; in sum, seasonably to water the grain and destroy the weeds. Some diseases are especially prone to resemble hysterical conditions' such as hemiplegia, disseminated sclerosis and certain emotional states. Every symptom may have a physical basis at first; later on its perpetuation, after its cause has been removed, is hysterical. This is well seen in the condition known to the laity and some physicians as shell shock. Leading questions put to a patient very often suggest to him symptoms. I have frequently noted at the clinics how easy it is to produce symptoms. Especially is this so in the suggestible. I myself have frequently produced symptoms by suggestion. These are as easily removed, if they have not been perpetuated, by countersuggestion.

The treatment of hysteria resolves itself into the application of psychotherapy. By this is meant explanation, suggestion, persuasion, and reëducation. Of course the most salubrious environment, especially for those cases which have endured a long time, which have had their complaints massaged into them, which have been electrified, bathed and drugged for months or years, is a properly ordained hospital where cure is suggested to the patient and he is removed from the influence of factors which were responsible either for the production or the perpetuation of his symptoms. Confidence in the physician is a necessity, but in an art like medicine faith is a requisite and we all have faith in this or that doctor. In the absence of Siloam's pool, where we might bathe and be healed, we seek the words of the physician. Verily I say unto you in hysteria do not promise a cure and not render the cure; your words will come back to mock you; time will take its revenge. Be sure you have made a correct diagnosis (psychotherapy will not cure a precocious dement), and you can safely promise a cure which you will be able to negotiate in the vast majority of cases. The few in which you fail you had better pass along to your enemy, for he'll get them anyhow and though his task is harder because of your failure he will probably enact a cure. In no condition more than in hysteria is the treating of the personality of the individual, rather than a stray organ of his anatomy, more essential—treating a man as you find him, a unique entity, for surely what will cure a blacksmith will kill a tailor.

Such an ideal hospital as I would have does not exist. I knew but one such and I am hoping that the philanthropists and legislators will see the light and realize that a surgical ward in a general hospital or the padded cell in a Bedlam is not the entourage for the myriads of psychoneurotics who form a goodly number of all your patients, many of whom, through no fault of yours, drift into the hands of chiropractors, osteopaths and others of their stripe, who know little of the material side of their victims, but much of the special and mass-psychology of these same victims.

By explanation is meant explaining to the patient the fact that he has no disease or lesion which can be held responsible for his symptoms, but that he continued to retain the symptoms after their cause had ceased to act, or other explanation as the individual case may require. Suggestion attempts to destroy a morbid mental process in the absence of logically adequate grounds, while persuasion is the endeavor to destroy a morbid mental process by the logical force of arguments. Here it might be well to mention the futility of one, who after trying various forms of treatment on a patient, attempts psychotherapy. His results are discouraging to himself as they are indifferent to the patient. If you have failed with the material remedies you are unlikely to create much impression with psychic palaver. You seek to conquer worlds which at one time were in your reach, but which, with this patient, are for you always beyond the horizon. Reëducation is more or less self-explanatory. In the case of hysterical patients one finds that it may be necessary to teach them how to walk, how to speak, how to see, how to hear and so on, but they are apt pupils when shown how. The cruder methods used, more often in the case of stupid patients, are those where fake operations are performed or placebos given, all preceded by the suggestion of cure. Hypnotism with suggestion is very effective, but I've had few cases where I personally have used it and I have gotten as good results without recourse to it.

While I was for a time on command at Seale Hayne Neurological Hospital in England, Lieut. Colonel A. F. Hurst, the commanding officer, tabulated 100 consecutive cases, not including the cases of aphonia. Of the 100 cases there had been an average period of treatment of eleven months before admission. Of the series, 96 were cured at one sitting. Average time required was 54 minutes. One was cured in 4 days, one was cured in 4 weeks, two were cured in 8 weeks. Of a series of 67 consecutive cases of aphonia following gassing, emotion, laryngitis, bronchitis, wounds of the neck and chest and debility, with an average period of treatment before admission of 205 days, maximum 35 months, minimum 2 weeks; 37 were cured in 5 minutes; 21 were cured within one-half hour; nine required more than one-half hour. We never looked for stigmata, and by looking for them produced them, but assured the patient of the nature of his trouble, explained it, and promised him a cure. To the beginner the results of psychotherapy will appear uncanny, but the cures under its use are so rapid and common that they prove more than anything else the nature of the disorder.

After a physician has exhausted his repertoire of diagnostic methods in an effort to discover a pathological basis large enough to be seen or felt which might account for the symptoms complained of, when he has used the therapeutic test, and with neither removed the symptoms, he is not at all likely to enact a cure or inspire any degree of faith in himself, by telling the patient that he has nothing the matter with him, for the patient may be an unbeliever and reason thus: "Why did this doctor examine me so often and treat me this way and that way for so long a time, if there is nothing the matter with me? Why did he not tell me long ago?" Or else he may say: "That doctor presumes a lot, for why should I have these symptoms if there be no physical basis for them?" And forthwith that same patient hies himself off to some other healer, be this latter of the Philistines or a regular doctor. I submit that it would be better if the physician, after he satisfied himself that there was no cause still acting to produce the symptoms, had told the patient his findings, explained the case and by persuasion, or what not, depending upon the nature of the symptoms and psychic make-up of the patient, had sought to remove the symptoms, rather than to continue searching for a basis more elusive than the fountain of youth. A clinical cure in more diseases than the psychoneuroses is, after all is said, the object one seeks; for though a man have a scar on his leg or any other place, it is quite possible for him to function with the part as well as he ever did, in spite of the fact that the cicatrix is indelible. Hysterical cases rarely come to autopsy, and if they did, one would not find a hysterical pathology. But how many cases coming to autopsy show very inadequate findings to account for both their symptoms and the exit? I put this forward to support the contention that the clinical cure is the one most sought after and I assure you that in many cases properly applied psychotherapy will deliver the goods and enhance the physician's reputation more than will the therapeutic property of any one or many drugs. There are those who, in the vernacular, call this method of treatment powwow, witchcraft, throwing-the-bull, etc.; but I know I am fighting a holy war when I speak in favor of something which has served me better than anything else in getting results and ipso facto some measure of praise from the sufferers.

DELAWARE—FEBRUARY

The February meeting of the Delaware County Medical Society was held at Chester Hospital on February 9th, Dr. John B. Roxby presiding.

The paper of the evening was presented by Dr. A. Graeme Mitchell, of the Department of Pediatrics of the University of Pennsylvania. His subject was "Dehydration and Acidosis in Infancy and Childhood, and their Treatment by Intravenous and Intraperitoneal Injections."

Dr. Mitchell first spoke of the conditions during which these symptoms arose, namely, the nutritional disturbances with accompanying vomiting and diarrhea, and acute infections such as pneumonia. The cause of these nutritional disturbances, which has been ascribed to food injury, to changes in the normal bacterial flora of the intestines and to the entrance of abnormal bacteria, is not important in this consideration. The resulting vomiting and diarrhea are followed by dehydration and consequent acidosis, the severity of which depends on the duration and intensity of the disturbance. Dehydration, or the loss of fluid from the body is readily recognized in these conditions by the physical appearance of the superficial tissues, which lose their normal elasticity and look dry. The characteristic symptom of acidosis is the peculiar sighing respiration or hyperpnea, which is unaccompanied by cyanosis.

The blood examination in these cases shows an increase in red and white cells, and in hemoglobin. The urine is scanty in amount, and contains albumin, casts, and at times sugar. There may be anuria. These symptoms have been explained in many ways, but while these theories have accounted for some of the symptoms, none of them have explained all the phenomena observed. This was true until Marriott offered his theory of the increase in blood concentration by the loss of fluid, which satisfactorily explains all the symptoms. This diminution in blood volume results in a greater number of cells and a larger amount of hemoglobin in a unit volume; the rate of flow of the bood is diminished, there is constriction of the arterioles with a damming back of the cells in the capillaries, resulting in the peculiar gray pallor noted in these cases. The kidneys are unable to separate fluid from the highly concentrated blood, and the diminished flow of blood throughout the body causes an accumulation of acid bodies. Both of these factors tend to produce the condition of acidosis.

Acidosis may be recognized by the characteristic hyperpnea, by the alkali tolerance test, and by the determination of the carbon dioxide tension in the alveolar air. These tests can be performed by the clinician. One can also determine the hydrogen-ion concentration of the blood and the bicarbonate content of the blood, but these tests must be performed in the laboratory.

The alkali tolerance test consists in the administration of sodium bicarbonate until the urine is rendered alkaline. Two or three grams are given in three hours and normally the urine will be found to be alkaline in one or two hours. If the stomach is not retentive one or two grams may be given intravenously. If acidosis is present four times this amount, or perhaps more, may be necessary.

The determination of alveolar carbon dioxide tension is done by Marriott's method. This consists in having the patient rebreathe into a rubber bag from 28-32 seconds, commencing at the end of an expiration and stopping at the same period of respiration. This rebreathed air is then passed through a standard solution of sodium carbonate containing phenolsulphonephthalein as an indicator, until the color no longer changes. The depth of color will depend on the relative amounts of alkaline sodium bicarbonate and acid carbon dioxide in the air, which in turn depends on the carbon dioxide in the expired air. Tensions between 30-35 mm. are normal in children, while a tension of 20 mm. indicates a severe grade of acidosis.

The therapeutic indications in such conditions are fourfold: 1, maintain fluid intake by the ordinary means, if possible; 2, prevent fluid loss; 3, if unable to accomplish the first indication, supply large amounts of fluid in other ways; 4, prevent or treat the acidosis.

1. The maintenance of normal fluid intake is difficult at times because of the persistent vomiting.

2. Early in these conditions one should encourage the diarrhea in order thoroughly to clean out the offending material, but later one should not hesitate to check it by bismuth, etc., so as to prevent the excessive dehydration.

3. Because of the fact that the stomach will not retain fluid in many of these cases, it is necessary to use other routes for the introduction of such fluid. The four usual methods of introducing fluid into the body are by mouth, by bowel, by hypodermoclysis and by intravenous injection. The first two are often impossible of use in these disturbances, and the third permits of the use of very small amounts of fluid. The fourth method may be used in children in whom the anterior fontanelle has not closed, by using the longitudinal sinus instead of one of the veins usually selected. In giving injections into the sinus one enters the needle near the posterior angle in the median line, the needle used being 18 to 20 guage of the ordinary type or one of the special needles made for this purpose. The superficial tissues are ordinarily 3 to 6 mm. thick. The fluid may be injected by a syringe or by gravity.

A fifth method is now employed, namely, the intraperitoneal route. It has been shown that 40 to 50% of normal sodium chloride is absorbed from the peritoneal cavity in one hour. Normal sodium chloride solution may be used, or Ringer's, 2 to 3% sodium bicarbonate, or 10% glucose; 150 to 500 cubic centimeters may be given every 2 to 24 hours, as necessary. The dangers of this procedure are overdistention of the abdomen, especially in pneumonia, adhesions, injections in cases having infections such as furunculosis, and in postoperative patients.

4. Acidosis should be prevented, if possible, by the measures already mentioned. Sodium bicarbonate is the best drug to combat the acidosis, and may be given by mouth or intravenously in a 4% solution. The amount should be sufficient to keep the urine neutral. Too large an amount will tend to cause alkalosis and tetany.

The relative merit of various therapeutic procedures is often difficult to determine, but Dr. Mitchell's opinion was that these methods outlined were the best.

Dr. Mitchell's paper was presented in a very pleasing and clear manner, and was of a great deal of help to all those who had the pleasure of hearing him.

George B. Sickel, Reporter.

ELK—JANUARY-FEBRUARY

The annual meeting of the Elk County Medical Society was held January 12th, at which the following officers were nominated and elected for the year: President, J. C. McAllister, Ridgway; vice president, J. E. Madara, St. Marys; secretary-reporter, S. G. Logan, Ridgway; treasurer, M. M. Rankin, Ridgway; censors, J. W. Warnick, Johnsonburg (1 year, expires 1923); M. T. Leary, Ridgway (3 years, expires 1925); S. T. McCabe, Johnsonburg (expires 1924). Dr. R. P. Heilman, Emporium, was nominated for district censor.

Following the election Dr. Elmer Hess, of Erie, read a paper on "Tuberculosis of the Kidney." Dr. Hess evidently knew what he was talking about, and presented his subject in a very understandable way. The paper was freely discussed and enjoyed by all who heard it.

The February meeting was held on the 9th, at Ridgway in the new rooms of the Country Club. A pleasant time was spent by all who were present. Dr. J. G. Flynn presented the retiring president's address, which while informal in character, was very interesting. Dr. Flynn called attention to the fact that, in looking over the events of the past year, it is very difficult to point to any single thing that has been thought out, brought or perfected in the one year—that medical progress moves more by decades or longer periods than by years or shorter spaces of time. He mentioned the various high spots in treatment and diagnosis, and in conclusion made an earnest plea for the doctors to be up and doing, looking after their own affairs, saying that various matters of legislation have been brought up and will be brought up, and that the best way for the doctor to protect his own as well as his patients' best interests, is through the county medical society.

The next meeting is to be held at St. Marys, on March 9th, where Drs. Black, Luhr, Madara and Shannon will have charge of the program.

S. G. Logan, Reporter.

ERIE—MARCH

The meeting was held a week earlier than the regular meeting in order to secure the services of Dr. E. H. Arnold, director of the New Haven Normal School of Gymnastics, who gave a very interesting informal talk on "Experiences in Orthopedics and Conclusions Therefrom."

The doctor warned any who proposed to specialize in orthopedics, that as patients requiring orthopedic treatment came mostly from the financially poor classes, it was not a greatly remunerative work. He spoke briefly on the increasing prevalence of rachitic deformities, caused by the increasing density of population in our cities, and consequently the lack of adequate sunshine which makes rachitis impossible. He cited the fact that this disease was not confined to children brought up on proprietary foods but was present also in breast-fed infants in poor hygienic surroundings. He called attention to the fact that tuberculosis in its various forms is due to similar causes, and that as the population increases and becomes more dense the incidence of tuberculosis increases. He urges physiological rest for all parts afflicted with tuberculosis of the bone. Flat feet and other deformities of the foot are a penalty to modern improvements in the paving of streets with cement, and neither man nor "Old Dobbin" can long step "high, wide and handsome" on the modern hard pavements of streets and walks. In poliomyelitis he has had a large experience in preventing deformities and urges early mechanical appliances to meet this need. The orthopedist should be the surgeon of choice to treat fractures and all cases should be referred to one so trained, if possible. Colles' fractures may much better be left alone than improperly reduced.

Owing to the fact that Dr. Arnold was obliged to leave early to catch a train, discussions and questions were eliminated. His remarks were very much appreciated and all who attended felt that it is the opportunity to listen to such men as he that makes, with other things, membership in the county medical society abundantly worth while. F. E. Ross, Reporter.

FAYETTE—JANUARY-FEBRUARY-MARCH

The January meeting was held in the Rainey Club Rooms, Uniontown, Pa., on Thursday, January 5, 1922, with the first vice president, Dr. Robert Jeffrey, of Uniontown, in the chair. The following officers were elected for the year 1922: President, Dr. George H. Robinson, Uniontown; first vice president, Dr. Robert H. Jeffrey, Uniontown; second vice president, Dr. Jno. V. McAninch, Brownsville; secretary-treasurer, Dr. Robert Heath, Fairchance; reporter, Dr. George H. Hess, Uniontown. Following the election of officers, Dr. H. C. Hoffman, of Connellsville, gave an interesting review of the new and interesting things seen at some of the large New York clinics.

In response to the question, "How can we make our society better this year?" the following members responded: Dr. J. B. Ewing, Uniontown, stated that all ex-presidents of the society since its organization, should be listed and the year of their service given. The photographs of the old members, with a biography should be secured and published in the *Mirror.* Dr. J. S. Hackney, Uniontown, said: "Boost the society every day in the year. Aid the secretary in his efforts to make our society rank with the best in the state. Contribute an article to the *Mirror,* either an original paper or case report or some clipping of unusual worth. Appoint a press committee to write articles for the daily papers. Have a reporter present at our monthly meetings. Start a campaign for a permanent home for our society. Invite the public to our meetings." Dr. S. H. Baum, Uniontown, suggested that we have one or more meetings each year devoted to clinics, members to bring patients to the meetings; and that we award an annual prize for the best paper written by a member, the executive committee to act as judge.

The February meeting was held the evening of the 2d, at Uniontown. In the absence of the president and first vice president, the second vice president, Dr. Jno. V. McAninch presided. At this meeting Dr. W. M. Lilley, of Brownsville, was elected censor for a period of 3 years. It was voted by the society that for a physician to allow his card to be placed in the margin of a hotel register for the purpose of informing guests of his being house physician was unethical and not to the best interest of the medical profession.

Dr. Harry J. Bell, of Dawson, read a paper on the "Management of Acute Pneumonia from the Standpoint of the Country Doctor." Dr. Bell, with his acute observations and extensive experience as a general practitioner, gave one of the most instructive and entertaining talks that the society has had the pleasure of hearing for many months. This paper, as was intended by Dr. Bell, brought out various expressions of opinion from different members, which added zest to the evening.

The March meeting was held at Uniontown on the 2d. The president, Dr. George H. Robinson, occupied the chair.

It was voted at this meeting to assess each member who was in good standing on March 28, 1922, two dollars, to be applied to the state legislative fund.

Dr. George H. Hess, of Uniontown, read a paper on the "Preparation of Patients for Roentgen Ray Examination." His conclusions were as follows:

1st, The relationship existing between the roentgenologist, the surgeon, the pathologist, the internist and the general practitioner is a very intimate one and requires their constant coöperation to secure the best results.

2d, The roentgenologist is not a picture maker but a consultant, the radiogram being to him what the prepared slide or specimen is to the pathologist, namely, the means by which he arrives at a conclusion.

3d, The radiogram is the property of the roentgenologist and should not leave his hands except at the special request of the referring physician and then should be returned to the roentgenologist when further consultation is completed.

4th, The radiogram is a shadow picture, and the detail in this shadow depends, other things being equal, upon the variations in the densities, atomic weights and thicknesses of the structures through which it passes. Therefore, good judgment should be used when applying splints, dressings, etc., to parts to be radiographed, provided they are to be retained in position for the examination.

5th, The proper preparation of the patient for radiographic examination is to the roentgenologist from a diagnostic standpoint what a similar preparation is to the surgeon from a therapeutic standpoint.

George H. Hess, M.D., Reporter.

HUNTINGDON—FEBRUARY

The Huntingdon County Medical Society met at the Huntingdon Club, Huntingdon, Thursday, February 9th, and was called to order at 2:30 p.m., by the president, Dr. Fred R. Hutchison. The members present were Drs. Beck, Plymire, Genung, Koshland, St. Clair, Reiners, Sears, Simpson, Richards, H. C. Wilson, Harman, Frontz, Doebele, Brumbaugh and Keichline.

The treasurer made his monthly report and our state society councilor gave us the latest on the One Board Bill, which looks good to us. We must get in touch with our legislators in regard to this. Our member on the state society's Scientific Work Committee told us of the meeting he attended last week at Harrisburg, where members gathered from all parts of the state to make the program for the Scranton meeting one of the best we've ever had. J. M. Keichline resigned as editor of the *Bulletin,* but will continue as reporter. J. M. Beck, secretary, was elected editor.

Cloy G. Brumbaugh presented one of the best papers we have had in many a day on "The Indications and Contraindications for Cæsarean Section." He briefly reviewed the history of the operation which was first done on a living woman in 1500 A. D. There were several cases in 1581. Symphysiotomy came into vogue in 1777. Mortality of section from 1610 to 1875 was 54%. Porro devised his radical (hysterectomy) operation in 1876, and in 1882 Senger began suturing the uterine wall. In 1907 Frank, Koenig, Beck and others began the transperitoneal, going through the cervical portion of the peritoneum.

To-day we have the two types of approach, high and low. We have absolute and relative indications for operation. Absolute are: obstruction of the pelvic outlet, extreme contraction of the pelvis (when the true conjugate is less than 7.5 cm., and we have a live fetus). When the fetus is dead we can do an embryotomy, down to 5.5 cm., but below 5.5 cm., cæsarean is performed on account of the mechanical difficulty and danger to the mother.

Relative indications are age, parturity, etc., Eclampsia—positive with primipara, unless labor has started; with multipara rarely so. Primipara with placenta previa usually positive; multipara not so positive. Accidental hemorrhage and impacted shoulder seldom indicated as the fetus is usually already dead. Hydramnios sometimes on account of no engagement and the exhaustion of the mother. Previous cæsarean not an indication; give labor a test. Uncompensated cardiac lesions may be an indication, but if performed, sterilize the patient. Contraindications are mutilation of soft parts, infections.

Points brought out in the discussion: Porro in infection. Present mortality low in selected cases. In Michigan, all cases for ten years, 13%; 15 years previous, 23%. Sterilization a legal point; consent must be obtained before operation. Symphysiotomy has been revived of late but has a very limited field of usefulness. Dr. Harman presented a case of hydramnios that delivered after medication and use of a tight abdominal binder.

Our next meeting will be held March 9th, and Dr. F. P. Simpson will present a paper on "Hand Infections." J. M. Keichline, Reporter.

INDIANA—MARCH

The Indiana County Medical Society met in the Elk Rooms, Thursday afternoon at 2:30, with President A. H. Stewart in the chair. The following members were present: W. F. Weitzel, F. F. Moore, Fred W. St. Clair, H. B. Neal, F. B. Stevenson, Ben F. Coe, W. A. Simpson, C. H. Kirk, W. M. Peters, and Malcolm Raymond.

Dr. Stevenson read a very interesting paper upon the "Diagnosis and Treatment of Acute Mastoiditis." The paper was discussed by Drs. Moore, Kirk and Weitzel, the latter two laying special importance upon the early use of the x-ray in suspected cases.

Dr. Peters gave a talk which was interesting and instructive, taking as his subject "Headaches." Following his talk the subject was discussed by all members present.

The resolution of the Medical Advisory Committee was carefully discussed from all angles and was unanimously adopted.

There being no further business the meeting was adjourned. James M. Torrence, Reporter.

MONTOUR—FEBRUARY

The regular monthly meeting of the society was held at the Geisinger Memorial Hospital, Danville, on Friday evening, February 17th, with the president, Dr. H. V. Pike, in the chair.

The following were present: members, Drs. R. A. Keilty, Reid Nebinger, E. H. Adams, C. E. Ervin, J. A. Jackson, G. B. M. Free, H. V. Pike, L. R. Chamberlain, E. T. Williams and J. H. Sandel; visitors, Drs. J. H. Focht and A. B. Vastine, Messrs. Stanley Stephens and R. W. Froberger, together with a number of the nurses of the Geisinger Hospital.

Dr. W. S. Brenholtz, councilor for this district, was present and presented the work of the Medical Legislative Conference, and asked that each member of the local society contribute a stated sum towards the work, which was agreed to. He enlarged upon the work of the conference and urged all to lend such assistance as is possibe by seeing that the proper sort of men are sent to the legislature and by keeping in touch with what goes on during the legislative sessions. He paid a high tribute to the work of the society and said he regards it as the best of the small county societies.

The scientific program, for the evening, consisted of a symposium on "Apical and Periapical Infections."

Dr. A. B. Vastine (Dentist), by invitation, gave a lucid outline of the anatomy and histology of the teeth and their peridental membranes. He began by saying that the fundamental basis upon which this discussion rests is the anatomy, histology and bacteriology of tooth structures, and its investing membranes. In order to appreciate the pathological significance of this fact, it must be borne in mind that the tooth has, practically, no faculty for reproducing lost or devitalized tissue; hence we must have resource to mechanical means of repair. The oral mucous membrane is peculiar in that, immediately adjacent to the periosteum of the tooth, the epithelium has no corium or vascular connective tissue. This accounts for the ready invasion of organisms around the necks of the teeth. The periosteum is a vascular connective tissue containing lymph spaces and cementoblasts. The vascular and lymph systems are directed towards the apex of the tooth roots, which accounts for the apex being the seat of infection in so many cases. The cementum contains fibers and vessels derived from the periosteum. There is no periosteum in the pulp chamber. There are multiple foramina and tubuli at the ends of the roots of all diseased teeth. This accounts for the difficulty experienced in attempts at treating and filling successfully the root canals. The alveolus, representing the investing bony structure for about two-thirds of the root, is a transient structure, the other third being true bone. The granular layer, between the dentine and the cementum, is the most resisting structure to bacterial invasion. The tooth, and investing tissue, is supplied by a terminal vascular and lymphatic system. The so-called sac, or epithelial structure, which is the barrier against invasion, is the actual foci of infection, and the organisms are disseminated through the vascular walls, the infected tooth structure being the source of the invasion. The absorption of the ends of tooth roots, as often seen after extraction, is due to the toxins in the culture media and not to the bacteria themselves.

Dr. Vastine next dwelt upon the history of the recognition of the relation of tooth infection to other diseased conditions, notably so-called rheumatism. It was noted that the inhabitants of the Nile Valley, the cradle of history, suffered from arthritis deformans as far back as their pathology can be traced. Enthusiasts on focal infection will be delighted to know that peridental infection was rife among these arthritics who hobbled to their graves a few thousand years ago. This relation was recognized by the Chinese as early as 3700 years B. C., and Jewish records trace it back at least 200 years B. C. Hypocrates, the father of medicine, laid great stress upon the teeth and their relation to the diseases of childhood and the eye; and, in our own state, Dr. Benjamin Rush, 1745 to 1813, after whom Rush Township, Northumberland County, was named, reports that rheumatism of the hip, accompanied by severe toothache, was cured by extracting the teeth. For its scientific recognition we are indebted to W. D. Miller, D.D.S., who was the first to point out and establish the fact that the human mouth is often the habitat and breeding ground of a large group of organisms, a great proportion of which are pathogenic, and that these organisms may be carried to distant parts of the body and set up disease in organs and tissues remote from the oral cavity.

Sir William Hunter, 1895 to 1910, indicted the medical and dental professions, declaring too little attention had been given to oral sepsis and that the subject was little understood. Dr. Chas. Mayo, in 1912, accepted the indictment and issued a challenge to the profession to take the next step in preventive medicine. The strife of to-day is to reconcile the highest ideal of human warfare, as expressed, in "If thine eye offend thee, pluck it out," with the ideals of surgery that would preserve function at all cost. The real aim of every sincere physician and surgeon is to preserve both health and function. The x-ray, in recent years, has greatly helped in the recognition of apical infections, and its aid has been a determining factor in clearing up many obscure cases. As the periapical question stands to-day, in order to attain the highest ideal of human welfare, radical surgery is indicated in a high percentage of cases. Preserving function is to be secured by mechanical therapy.

Dr. E. H. Adams, in a well prepared paper, discussed the subject from "The Surgical Standpoint." He said that the surgeon always strives to be a conservative in his attack and tries to trace things to their source. Again he often feels himself to be too much engrossed in improving the details of his operations for the removal of the acutely inflamed appendix, the gall-bladder, which is the seat of infection or stones, or performing a gastroenterotomy for a gastric ulcer, to do much speculating as to the etiology of these common surgical conditions. He is inclined to consider them as conditions for cure by plucking out the offending organ and allowing nature to take care of the causative factors. During his less strenuous moments he is likely to be thinking of some way to improve his technique or his diagnostic skill. He is not likely to be in the spirit of being loath to cut off the hand that feeds him, by investigating and practicing preventive medicine. However this may be, it is pretty generally recognized that apical infections can produce surgical diseases in distant parts of the body, as ulcers of the bladder, infections of the gall-bladder or appendix especially, if the bacteria are of the streptococcic variety, which often come from the teeth or tonsils.

The term "foci of infection" has, for many years, been a convenient etiology for many athermic unexplained conditions; and the tonsils, devitalized teeth and nasal sinuses have been held accountable for all sorts of human ills. During Dr. Adams' first years in medical school, a teacher of his was very enthusiastic over the discovery of a rare type of bladder ulcer, which could only be cured by excision, followed by the cleaning up of all foci of infection; and at that time he was much impressed with a history of sore thumbs in a number of these cases. But tonsilectomy did not cure all, and he later found that apical infection must be dealt with if he would prevent a recurrence. In a study of 15 patients suffering from this rare form of ulcer, who applied at the Mayo Clinic, it was found that eleven of these showed evidence of periapical infection—a rather large number in a group of 15—and it is significant, when born in mind that all of these infections were associated with streptococci.

A severe case of arthritis of the vertebral column was cited, in which marked results had followed cleaning up all points of the mouth, and the administration of several blood transfusions.

The writer noted that during the past winter there were more cases of acute appendicitis than during the summer months; that there had also been quite a number of cases of angina, and that 50% of these had associated abdominal symptoms of greater or lesser severity. In several cases this latter condition was severe enough to suggest an operation, had it not been for the coexisting angina and colds. He noted an apparent connection between these streptococcic anginas and the appendical symptoms, and the same was also noted by several of the general practitioners of the town. It would appear that there is still a vast amount of work to be done to determine the etiology of many of our surgical conditions, and the surgeon and practitioner must be open minded and weigh all evidence. In closing, the writer expressed the belief that the teeth and tonsils, which harbor the streptococci, are responsible for many of our maladies and, as time goes on, we will wonder why we did not accept many of the views which were set forth a long time ago.

Dr. R. A. Keilty took up, and in quite an able manner, discussed "The Pathological Viewpoint" of apical infections. He began by stating that infections are the same wherever found, and must be so regarded. There must be a portal of entrance; without this, there can be no setting up of an inflammation. There is also a line of resistance, a protective membrane; until this is crossed there can be no distribution of infective bacteria to other parts of the body, as the appendix, the bladder or the gall-bladder. Points of infection may heal for a time, only to break out later, or end in such diseased conditions as sciatica, arthritis, endocarditis, etc. He stressed the thought that we should keep in mind other sources of infection besides the teeth. The acute exacerbations which are likely to occur will depend not a little on the type of the bacteria, whether streptococcic, staphylococcic, or mixed.

In opening the discussion which followed the presentation of the papers, Dr. Ervin said that we must try to figure out which part of the body is at fault; that is, just where the foci of infection lie. He cited a severe case of chronic arthritis which had cleared up surprisingly after the extraction of several diseased teeth.

Dr. Nebinger recited a case of cornial ulcer which had resisted treatment for some time, but recovered rather promptly after the mouth had been cleaned up. He said also that it is often a question as to how far we should go in our attempts to clear up some of these cases. Naturally we should look up all foci of infection and clear up those which seem to be most important.

Dr. Jackson said it was often a question whether we should be conservative or aggressive in the conduct of these cases. He further said that he was glad to have heard the discussion of this subject and felt that he had learned a great deal from it. He was, however, of the opinion that nature provides for the care of many infections and was, therefore, inclined to be conservative, to trust in God and keep his phagocytes in good working order.

Dr. Vastine, in closing the discussion, thanked the members of the society for the courtesy extended in inviting him to have a part in the program, and for the manner in which they had received that which he had presented. He felt that much good comes out of such discussions and that advancement had been made.

Meetings like these are helpful and he would be glad to enjoy more of them. A note was presented from Dr. H. B. Meredith in which he said that he felt our society had made great advancement during the past year and tendering his hearty congratulations.

Those present were glad for this word of praise and congratulation from an absent member and the secretary was directed to make suitable reply. No further business appearing, the society adjourned.

J. H. Sandel, Reporter.

MONTGOMERY—FEBRUARY

The regular meeting of the Montgomery County Medical Society was held at the Montgomery Hospital, Norristown, February 1, 1922. The following members were present: Drs. G. W. Miller, W. G. Miller, Hubley, Parker, Kriebel, Irwin, McCracken, Sherborn, Bostock, Lukens, Knipe, Atkinson, Garner, Hunsberger, McLaughlin, Simpson, and Buyers.

A motion was carried that a committee of three be appointed to arrange a tri-county meeting sometime in the summer, Delaware, Chester and Montgomery Counties to attend this meeting.

Drs. R. Z. Cope, of Hatfield, and Joseph E. Beideman, of Norristown, were unanimously elected to membership.

Dr. Bostock read the following directions which he gives to nurses for preparation and care of maternity cases:

"On admission of patients notify chief and obtain a specimen of urine for analysis. When patients admitted are not in labor clip pubes, give enema and bath. When patients admitted are in labor clip pubes, give enema but no bath. Keep all patients in bed till seen by chief or resident. Give liquid diet until changed. No vulval dressings until labor is complete, unless so ordered. Put to bed when membranes rupture or any complication arises. As soon as patient is in active labor she is to be placed in delivery room.

"Preparation for delivery: Nurse to scrub up and gown herself as for any major operation except mask. Patient's perineum shall be cleaned by sterile gauze with green soap, sterile water, lysol or creolin. Patient to wear sterile leggins and draped as for gynecological examination. Kelly pad to be used.

"Sterilize and lay out the following instruments for all normal cases: Sims speculum, double tenaculum, uterine dressing forceps, tissue forceps, hemostats, needle holder, needles, catgut, silkworm-gut, scissors, intra-uterine packing, catheters, fetal ventilator, small English and Simpson forceps, special cord basin containing scissors, three hemostats, tape, iodine one bottle full strength, one bottle 50% strength.

"All patients to be catheterized before any obstetrical operation.

"During third stage uterus to be held 20 minutes, or until the delivery of the palcenta.

"Anesthesia cases to receive 1 c.c. pituitrin after third stage.

"Cleanse perineum with lysol or creolin, apply perineal pads, remove draperies, leggings, etc., and remove to bed if not bleeding.

"Baby: Free eyes, nose and mouth of mucus and drop argyrol in eyes. Cord tied at skin margin and clamp removed. Touch end of cord with full strength tinct. iodine, paint one inch around with 50% iodine, apply sterile gauze and binder. No powder on cord. Use warm sweet oil for first bath, no tub bath. Examine the baby for any defects or deformities and record them. Lay baby on right side, put to breast in eight hours, then every three hours. Give warm water if necessary, no sugar, the first eight hours. Give one dram of olive oil on the second day; repeat if necessary. Wash eyes with boric acid solution daily.

"Patient: Take temperature, pulse and respiration one hour after delivery. Diet first twenty-four hours liquid, second twenty-four hours semi-liquid. Give castor oil the second day. Full tray after free evacuation of bowels, if no temperature. If there is postpartum hemorrhage notify chief or resident at once, raise foot of bed, lower head, grasp uterus and give hypo pituitrin 1 c.c. If patient does not void in eight hours catheterize. Save specimen for the laboratory. Breasts: Nipples to be cleaned with boric acid solution. If sore touch with silver nitrate solution. Nipples to be cleaned with gauze between nursings. Vulval pads to be changed as often as necessary, and always after urination and defecation. Vulva to be cleansed by pouring over it bichloride solution 1-6000 or creolin 1%. If stitches are present these are to be cleansed with sponge or cotton with bichloride solution. If there is any sudden rise of temperature, or a chill, etc., notify chief." John C. Simpson, Reporter.

PHILADELPHIA—JANUARY 19TH
PRESIDENT'S ADDRESS

George Morris Piersol, M.D.
Philadelphia

In accordance with the traditions of our Society, it is incumbent upon the retiring president to present to you a brief summary of the Society's activities for the year and to emphasize such matters as are deemed of importance. Before doing so, however, let me express to you my deep appreciation of the honor which you bestowed upon me when you saw fit to elect me president of this Society. I am the more sensible of the honor when I recall the long list of distinguished physicians that have been my predecessors in this high office.

It is eminently fitting at this time to consider to what extent we, who have had the honor to be entrusted with the conduct of the Society's affairs for the past twelve months, have been able to carry out its purposes. The object for which this Society was formed is so well set forth in the second article of the charter of organization, that it would be superfluous to reiterate it here. During this seventy-second year of the County Medical Society's existence that is just closed, your officers and committees, fully aware of their responsibilities, have striven earnestly to emulate the enviable records of their predecessors, and to carry out to the fullest the purposes of our organization. Whenever they have failed, it has not been from lack of earnest and conscientious effort.

There is but little doubt that the chief object of the County Medical Society is the diffusion of scientific knowledge, not only among its own members, but also throughout the medical profession of this city. The work of the program committee, under the able and enthusiastic direction of Dr. J. Norman Henry, furnishes ample proof that this function has been fulfilled. At our scientific meetings throughout the year, many subjects of timely interest, presented by those most competent to speak with authority, have provoked lively and profitable discussions.

There are numerous societies whose meetings are devoted to the presentation of original observations, often of a highly technical and scientific character. It would seem ill-advised for the County Medical Society to attempt to encroach upon the field covered by such organizations. Our endeavor should be to make our meetings attractive and profitable to a larger group of the profession. Future committees charged with the responsibility of arranging programs, will do well to follow the excellent example set by Dr. Henry and others who have so admirably succeeded in bringing before us subjects of great practical importance not only to physicians, but also to the community at large. An effort should be made to emphasize at our meetings the correlation that truly exists between the fundamental medical sciences and the clinical branches of medicine. The bearing which the real advances in scientific medicine have upon the art of medicine should be stressed. In this way can our scientific meetings best serve to stimulate and educate those whose usually busy lives preclude the possibility of their keeping in close touch with the ever widening application of medical research to the actual practice of medicine.

Personal observation would indicate that the well balanced symposium participated in by authoritative speakers, is a more effective and interesting way of presenting the broader aspects of medicine to the profession at large, than meetings given over to a number of papers on isolated and nonrelated subjects, however excellent these papers may be in themselves. We should further insist that, except under unusual circumstances, papers presented before this Society should be short, concise and well prepared; long drawn out and rambling discourses should have no place before a group of practicing physicians too often wearied by the multitudinous duties of the day, who are more anxious to hear essentials than to be burdened by details. Many of the standing committees of the County Medical Society have coöperated admirably in the arranging of programs. These committees are peculiarly well fitted for such a task, and in the future their aid should be sought even more frequently than has been the case in the past.

As a society we should make greater efforts to educate the public and to bring before this community in an authoritative way, what the medical profession has accomplished and is doing to safeguard the people of this commonwealth. We cannot expect more coöperation or intelligence on the part of the people at large in regard to matters pertaining to public health, sanitation and preventive medicine until we have made a more earnest effort to educate them. We must learn to take them into our confidence and to give them a better insight into our problems and our difficulties. Much misconception will disappear when we have learned to deal more frankly with the public. The recent public meeting on vivisection, participated in by this Society, was a step in the right direction. If more such gatherings could be fostered much might be done to bring public sentiment more into sympathy with the ideals and aims of the medical profession.

The other great function of our Society, that of safeguarding the interests of both the profession and the public in matters relating to public health and medical legislation, has occupied much of our time and energy during this past year. In this connection I wish publicly to pay tribute to Dr. Arthur C. Morgan and his committee on Public Policy and Legislation, as well as to Dr. George A. Knowles in his capacity as a member of the Legislative Conference. No one who did not personally have an opportunity to observe can appreciate the tremendous unselfish efforts put forth by these and other members of our Society in combating certain ill-considered legislation, which, had it been successful, would have worked irreparable harm not so much to the medical profession as to the community at large. What has been successfully accomplished by Dr. Knowles and Dr. Morgan and their associates, is too well known to you to require repetition. Suffice it to say that compulsory health insurance has not come to pass, and certain of those who are exponents of sundry so-called healing cults have thus far not been accorded the recognition nor the privileges which they sought so ardently.

Up to this time the work of protecting the public and of safeguarding the interests of the physician has devolved upon a few, who, alive to ever threatening and varied dangers have unselfishly and repeatedly served as the protectors of the more indifferent majority of the profession. Each year it becomes more apparent that if our efforts are to be crowned with ultimate success greater general interest must be taken in legislative problems. The time has come when physicians in general should realize their responsibility and appreciate their power in matters such as health legislation that involve the common good. The doctor must take a greater interest in practical politics. It is incumbent upon us to impress upon those who represent us in our lawmaking bodies, their obligations so far as they pertain to preserving the health of the community and to make clear to them that if they sponsor or enact measures inimical to the public health, theirs and theirs alone is the responsibility. We as a profession must aggressively advocate and work for the adoption of laws that shall require of all who aspire to treat the sick in any way, a single and at the same time an adequate standard of preliminary education and training in the fundamental scientific branches. By making the necessity for such legislation clear, not only to those who represent us, but also to the general public that is so vitally concerned, we can do much to bring about this desirable state of affairs. Unless we individually and collectively exert our fullest influence to this end, we have neglected our plain duty and have failed in the trust that has been placed in us.

There is another matter of medicolegal importance that requires mention. A year ago you were very properly led to believe that a decision interpreting certain features of the Workmen's Compensation Law would soon be forthcoming. Such undoubtedly would have been the case had it not been for certain legal vagaries and intricacies difficult of comprehension by the mere medical mind. However, thanks to the persistent and well directed efforts of Dr. Moses Behrend, who has the matter in charge, a new disposition has been made of the case. Rapid progress is now being made and within a few weeks the long awaited decision will be handed down.

During this past year our Society enjoyed the pleasant duty of acting as host to the Medical Society of the State of Pennsylvania. The success of this meeting has been generally conceded, and this success was made possible by reason of the tireless efforts of Dr. J. B. Carnett, Chairman of the Committee on Arrangements for the Philadelphia Session of the State Society, and the group of earnest and enthusiastic men and women that were associated with him on this committee. So efficiently did the committee perform its duties that not only did it return untouched the sum that was appropriated to its use by the Society, but it actually turned over to our treasurer a considerable balance in addition.

Death has not been idle among the ranks of our members during the past year. Among the number that have been taken were many who had labored long and faithfully in the interests of the County Society, whose loss has been keenly felt, and whose places in the profession can never be filled. I refer to such men as Dr. William M. Welch, Dr. Allis, Dr. Fussell and one of our own former presidents, Dr. George Erety Shoemaker. Of all who have been summoned from our midst, there was no one to whom the Society owes a greater debt than Dr. J. Morton Boice, for four years our faithful, painstaking and efficient secretary. His unfailing devotion to his work and the unflinching courage with which he bore his unhappy fate, furnish us all with a never-to-be-forgotten example.

The untimely death of our secretary emphasized what was pointed out by my predecessor a year ago, namely, the advantage of having the business of the Society carried on at some central office devoted exclusively to that purpose rather than at the private home of an individual. There are those who doubt the wisdom of such a plan and the question is clearly debatable, but if this change is seriously contemplated the present situation offers an exceptionally good opportunity to institute such a move.

In the course of this report, the work of some of the Society's committees has been touched upon. The work of all the committees at large of the County Society, however, deserve commendation, especially the Committee on Increase of Membership which functioned so actively under the direction of its chairman, Dr. George Wilson, and the Library Committee which, thanks to the efforts of Dr. James M. Anders, has established again several branch libraries. It would be impossible here to enumerate in detail the activities of all the various committees, but mention should be made particularly of the excellent work performed by the Committees on Prevention of Cancer; Narcotics; Medical Education; Nervous and Mental Diseases; Food, Drugs and Beverages; Tuberculosis and Public Health, and Preventive Medicine. The Society is obligated to these and to the other committees at large that have served so faithfully during the year.

I wish, however, to pay an especial tribute to the committees of the Board of Directors. The successful conduct of the Society during this year has been due in a large measure to the never-failing enthusiasm and consistent efforts of these committees. The Committee on Finance, with Dr. Parke at its head, in coöperation with our treasurer, Dr. Shumway, has ably and carefully administered the finances of the Society. The end of the year finds us in the same strong financial position that we occupied at the beginning. The invaluable work of Dr. Henry and the Program Committee has already been discussed. Dr. Cassidy has directed the work of the Committee on Medical Defense in the same thoughtful and efficient way as heretofore. All of our members who have required legal aid have been successfully defended. At the beginning of the year, Mr. Hampton L. Carson found it necessary to withdraw from the position of counsel for our Society. After mature deliberation, the Board of Directors appointed Mr. Ralph B. Evans in his place. During the greater part of this year he has successfully conducted the defense of the few members who required such assistance. How well Dr. Roderer and the Committee on Publication coöperating with Dr. C. B. Longenecker, editor of the *Roster*, has accomplished its work, is too well known to all of you to require further comment. We all gladly acknowledge our debt to them. Dr. Maier and the Committee on Branch Societies, has successfully struggled with various difficult problems. Thanks to their efforts, all but one of those branch societies which were recently inactive, have been revived.

It is doubtful whether the Society as a whole realizes or fully appreciates the large amount of effective work performed by their Board of Directors. No body of men ever labored more earnestly, enthusiastically, or more unselfishly for the best interests of an organization than have the members of this Board. They are deserving of your highest commendation and complete confidence. I wish to take this opportunity of assuring the Board of Directors, their secretary, and my other associates in office, of my gratitude and appreciation of their unfailing support, coöperation, and help. The successful administration of your Society during this last year is the direct outcome of their wise counsel and ripe experience. So long as those who in the future serve you as directors are embued with similar lofty ideals and high purposes, the destiny of the Philadelphia County Medical Society is assured.

WARREN—FEBRUARY

The February meeting of the Warren County Medical Society was a distinct success in every way. The attendance was 50% of the total membership. The business part of the program included a discussion concerning the activities of Federal narcotic law agents in this vicinity. Warren County has been quite free from addicts, so that the physicians have been called upon to write few, if any prescriptions for such unfortunates. A committee was appointed to examine the situation and report at next meeting.

Dr. Geo. W. Cottis, of Jamestown, was the guest of the Society, and gave a very helpful paper on "Goiter." He said goiter is still as mysterious as ever. No theory of its origin suffices to explain why it should be ten times more frequent in women than in men; why it should be common in adolescence and then disappear; why it should be endemic in some regions. He divided goiters into five types and two primary divisions: toxic and non-toxic; physiologic enlargements, colloid degenerations, adenoma, malignant and toxic. The great majority of simple goiters dissappear of themselves or under iodin treatment. Many of the simple goiters of long standing undergo colloid degeneration, but give no symptoms except by pressure on account of size. Toxic goiters are probably a derangement of the sympathetic nervous system. Exophthalmic goiter is in no wise related to toxic thyroid disease. The adenoma develops along with the heart and nervous symptoms and exophthalmos. In the so-called toxic adenoma the goiter is present for some time before any toxic symptoms appear and exophthalmos is seldom if ever present.

In all cases of hyperthyroidism there is an over sensitized sympathetic system. The adrenalin test is often fallacious. The metabolism index is a safer diagnostic agent. Exophthalmic goiter (Graves' disease) gives a high rate of metabolism; toxic adenoma a low rate. Medical treatment is indicated in simple, early colloid and early exophthalmic goiters; x-ray and surgery in adenoma and old colloid if symptoms warrant removal, and in exophthalmic if not responding to medical treatment.

There was considerable discussion, showing that the members fully appreciated the paper.

A very fine chicken dinner was served in the Elks' dining room, Drs. J. W. and E. Gail Hamilton acting as hosts.

M. V. BALL, Reporter.

STATE NEWS ITEMS

BIRTHS

A Son was Born to Dr. and Mrs. Samuel N. Dague, of Houston, on February 20, 1922.

Dr. and Mrs. Robert D. Swab, of Lancaster, are being congratulated upon the recent arrival of a son to their home.

DEATHS

Mrs. Martha B. Wycoff, mother of Dr. W. A. Wycoff, of Pittsburgh, died at her home in Bethel, February 21st.

Mrs. Mildred Capwell, wife of Dr. Albert Butler, of Scranton, died at her home in Great Falls, Montana, on March 18th, following a two weeks' illness.

Dr. Thos. J. Blackwood, of New Castle, a graduate of Jefferson Medical College, Philadelphia in 1866, died recently. Dr. Blackwood was the oldest doctor in Lawrence County, both in years and in practice.

Dr. Charles H. Wallace, of Philadelphia, died on February 15, 1922, from pneumonia, aged sixty-one years. He was a graduate of the School of Medicine, University of Pennsylvania, class of 1886.

Dr. Joseph McElroy, of the Washington County Medical Society, died at his home in Hickory on February 22nd. Dr. McElroy was born in 1836 and was a graduate of the University of Wooster, Medical Department, Cleveland, Ohio. He leaves his widow, Mrs. Margaret Brown McElroy.

Much Sympathy Has Been Expressed to Dr. H. S. Heller, of Lancaster, in the death of his wife. Mrs. Heller had not been in good health since their return from the Philippine Islands, but her sudden death was a great shock to a wide circle of friends. The doctor and two children survive.

Dr. Charles J. Jessop, of Kittanning, died in the West Penn Hospital on March 7th, aged 71 years. He was born in 1851 and was graduated from Jefferson Medical College, Philadelphia, in 1874. Dr. Jessop was the founder of the Kittanning General Hospital and was an active member of both the state and county societies as well as of the A. M. A. He was the last of the family and the name goes out with his death.

Dr. Harry Stephens Stone, one of the younger of Franklin's physicians, died suddenly on the evening of February 16th. Dr. Stone was born in 1876 and was graduated from Sioux City College of Medicine, Iowa, in 1898, after which he practiced medicine in Franklin for 20 years. During the World War he entered the United States Army as a captain in the Medical Corps and served at Camp Oglethorpe, Ga., for four months.

Dr. N. C. E. Guth, of Allentown, died from pneumonia on March 16th, aged 71 years. Dr. Guth was born in 1850 and began the study of medicine in 1869 with the late Dr. A. P. Fetherolf at Chapman's Station, and subsequently entered the University of Pennsylvania, from which institution he was graduated in 1873 with the degree of doctor of medicine. He was a former president of Lehigh County Medical Society and was very active in church work and many fraternal orders. He is survived by his widow and two sons.

Dr. J. S. DeMuth, a member of the Allegheny County Medical Society, died February 21st in the Presbyterian Hospital, Pittsburgh. He was a graduate of the Pittsburgh Academy and of the Bellevue Medical School, of New York. Subsequent to seven years devoted to the general practice of medicine at Crafton, he engaged in the specialty of eye, ear, nose and throat. He served in the Spanish-American and the World Wars. He leaves two daughters, Miss Helen and Miss Eleanor DeMuth; his mother, Mrs. Mary DeMuth; two brothers, Joseph and Harry DeMuth, and a sister, Mrs. W. A. Moore, of Ontario, Canada.

ITEMS

Dr. A. M. O'Brien, of Sharon, spent a week in New York recently.

Dr. Granville T. Matlick of Wilkes-Barre, has been ill at his home for some time.

Dr. Harry Millikin, of Sharon, is suffering from an attack of scarlet fever.

Mrs. John F. Spearman, of Sharon, has returned from a trip to Europe, having spent six months with her parents in Silicia.

Dr. Walter S. Stewart, of Wilkes-Barre, underwent a serious operation in a New York hospital during the latter part of March.

Dr. Edith MacBride and Miss Margaret Cunning, Superintendent of Buhl Hospital, Sharon, attended the U. S. Public Health meeting in Pittsburgh.

Dr. Adelaide Ellsworth, of Warren, sailed from New York in February for a cruise of the Mediterranean and extensive travel in Europe, Palestine and Egypt.

Dr. Theodore B. Appel, of Lancaster, National President of the Chi Phi Fraternity, spent three days recently in Ames, Iowa, where a chapter was installed. He reported an enjoyable trip.

A very successful clinic was conducted by the Medical Alumni of the University of Pittsburgh, on February 15th, at the Magee Hospital, Pittsburgh. There were over 100 present. Clinics of a like nature will be conducted at intervals. The officers of the Association are: president, Dr. R. J. Behan; vice president, Dr. Calvin C. Marshall; secretary, Dr. H. J. Benz; treasurer, Dr. H. E. McGuire.

ENGAGEMENTS AND MARRIAGES

Dr. and Mrs. Paul Bernard Cassidy, of Philadelphia, recently announced the marriage of their sister, Miss Elizabeth A. Cassidy, to Dr. William Parks Belk on February 10th, in Philadelphia.

The Marriage of Miss Harriet C. Oenslager, youngest daughter of Mr. and Mrs. Frank Oenslager, of Harrisburg, to Dr. Martin F. Kocevar, of Steelton, was solemnized on March 14th in Atlantic City. After the ceremony Dr. and Mrs. Kocevar left on an extensive southern trip. Mrs. Kocevar received her education at the Seiler School of Harrisburg and the Bristol School, of Washington, D. C. Dr. Kocevar is a graduate of the University of Maryland.

The Engagement of Dr. William Pepper, Dean of the Medical School of the University of Pennsylvania, to Mrs. Phoebe Voorhees Drayton, daughter of the late Theodore Voorhees, president of the Philadelphia and Reading Railway, was recently announced. Dr. Pepper is the son of the late Dr. William Pepper, Provost of the University, and a cousin of Senator George Wharton Pepper. During the war Dr. Pepper served as a major with the United States Army Medical Corps at Chattanooga, Tenn.

The Marriage of Miss Anna Duncan Wills, daughter of Mr. and Mrs. William Wills, of Duncannon, to Dr. Josiah F. Reed, of Harrisburg, took place on the evening of March 15th in the Presbyterian Church of Duncannon. During the war Mrs. Reed was engaged in welfare work among the soldiers, being stationed at various camps until October 1, when she assumed the post of executive secretary of the Harrisburg Red Cross Chapter. Dr. Reed is a graduate of the Lebanon Valley College and the University of Pennsylvania School of Medicine. He served in the Medical Corps during the war and, following the signing of the armistice, spent several years in special work in Philadelphia and New York. At present he is a member of the staff at the Harrisburg Hospital and director of prenatal clinics of the State of Pennsylvania.

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ORIGINAL ARTICLES

THE ENDOCRINE SYSTEM: SOME RELATIONS TO OPHTHALMOLOGY AND OTOLARYNGOLOGY*

PERCY FRIDENBERG, M.D.
NEW YORK

I greatly appreciate the honor of speaking in a city, which from the foundation of the republic has been identified with high standards of medicine; in the Philadelphia of Franklin and Rush and of so many worthy successors, and before a society which has so notably maintained those traditions. My pride is tempered by a sense that what I have to offer you is fragmentary and it may be somewhat abstract and suggestive, but not always practical; and that there are men, almost within sound of my voice, who have contributed largely to our knowledge of this subject, notably Sajous, Zentmayer, and deSchweinitz and his school.

Our basic conceptions of disease are intimately bound up with our philosophy of life and with current knowledge of nature and its forces. A medieval and mystical conception of the make-up of the individual attached enormous importance to the viscera, and distinguished types of mankind with special reactions to health and disease, diet and drugs, and not less important, to emotions of fear and anger and the manifold cares which infest the day.

The practical physician recognized choleric, sanguine, lymphatic, bilious and splenetic individuals; each with his own reaction. The advent of cellular pathology with Virchow and his followers swept away this entire edifice as fanciful and unscientific. The germ of truth it undoubtedly contained was for the time lost. The new pathology, quite sure of itself as all new sciences are, saw in the human organism merely a variety of structures easily interpreted and very simply combined; in a word, a histological specimen. Even the blood was merely a tissue in circulation, with large, fluid, intercellular spaces. Surely, a mechanical conception could go no further. Then, bacteriology with its great and valuable contributions to our knowledge of infectious disease came in and partially displaced the Virchow idea. But, again, there was an incomplete and one-sided view of the animal organism—this time as a culture tube, the seat of an invasion by a germ, and of disease as a simple experiment in inoculation. It was many years before the investigations of Ehrlich and others into the chemical and biological nature of the blood proved the great importance of this element in basic and vital reactions of immunity, metabolism, infection and systemic resistance. Seropathology entered into its own. In a way it was a return to the old humoral pathology, or at least a reaction from the mechanical conception of cellular pathology.

Let me anticipate by saying that we must recognize in endocrinology not only a return to humoral pathology, but also a return with the added knowledge of the immune reactions gained by serology, with modern conceptions of biology, of the physical chemistry of metabolism and the other vital processes. We still recognize, laymen as well as physicians, the phlegmatic, the choleric and the sanguine individual; only we have changed the names and we have learned something more about them. The family of ductless glands, the endocrine system with its internal secretions or hormones, not an organ but an orchestra, is the important factor in the determination of individual reactions. A recognition of this truth is foreshadowed in some of the earliest observations and experiences of the race, in tribal manners and customs, in speech and fable. Courage and cowardice, passion and pain, fear and rage—in short, the emotions—were sensed as essentially noncerebral, extracranial, and felt instinctively to be systemic and above all, visceral. In this connection may I refer to Crile's splendid work? The largely secretogenic function of the emotions and the sensory origin of those emotions themselves, the pharmacophysiological parallelism of specific poisons and specific endocrine hormones, particularly adrenalin and thyroxin, the toxic action of fear and fatigue, and many other data linking the glands of internal secretion with our normal or morbid reactions to the environment, are understood largely as a result of his research work and his truly constructive imagination.

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*Read before the Section on Eye Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

It has taken scientific medicine a long time to realize that, just as there were brave men before Agamemnon, so there are important nerves besides the cranial, and that "nervous" phenomena are more often due to systemic than to cerebral reactions. The nature of those "nerves" and of those reactions was obscure for a long time, and the study of their relations led to a recognition of the important functions of the vegetative nervous system, that of the extended vagus and of the sympathetic, so intimately connected with all vital processes. It was found that these nervous systems had a very close causal and effectual dependence upon the glands of internal secretion. One by one, these organs of special function were recognized as such, and it is probable that the end is not yet. We know, in a way, the endocrine functions of the pituitary, the thyroid and the adrenals, somewhat less about the gonads, the thymus, the parathyroids, little if anything of the pineal gland, the liver, spleen and pancreas, and of a possible endocrine influence of placenta, mammary gland, and brain.

There are certain dramatic situations in clinical medicine which have been shown to depend on disturbance of the endocrine balance, as you know. I need merely mention exophthalmic goitre and its antagonist states, myxedema and cretinism; the contrasting pair, acromegaly and dystrophia adiposogenitalis (Froelich); the typical changes in the osseous structure of skull and face and the equally typical blindness of pituitary disease. But further study has shown that there are many less obvious conditions, border line in nature, minor ailments, and tendencies within the limits of health, which show to the trained eye an undoubted endocrine origin. Even within the limits of perfect health it has been shown that many somatic, systemic reactions associated with the different periods of life, are brought to term, as it were, by the endocrines. Let us merely mention in passing, puberty, menstruation, ovulation, pregnancy, the formation of the placenta, mammary development and secretion, the menopause and the equally undeniable, though less definite, male climacteric. Long before the era of scientific medicine, practical man understood the deep-seated influence of the gonads and the far-reaching effect of their removal on such divers systems of the organism as bone and fat production, the voice, skin and hair, and no less decidedly on temper, courage, and temperament. These, may we not say, obvious surface indications were the first to be recognized. Little by little we come to find a participation of the endocrine system in more recondite functions, in immunity and the reaction of the organism to infection, in structure, in physiology and in psychology. We recognize a pituitary type of individual, with somatic markings, well understood, and temperamental markings as striking and typical. We also have a thyroid type. Again, we find a predominance of this or that gland at different crucial periods of life, with puberty, menstruation, pregnancy, and so on, with a peculiar interrelation of function and organ, resulting in a circle of cause and effect phenomena. Basic metabolism, finally, is deeply influenced by the endocrine balance, and in every disease, diathesis or idiosyncrasy of this function there is an element of endocrine origin. An important aspect, furthermore, is the connection of the endocrine system with the two systems of vegetative nerves: on the one hand the vagus, with its striking synthetic action in producing tensions, inhibitions, secretions and spasmodic reactions; and on the other the sympathetic, with its catalytic influence and relaxing effect on blood vessels and on secretory as well as trophic nerves. The periodicity of vital processes and the rate and relation of growth of the bony skeleton, summed up as ripening and decay, is also largely endocrine. Even so definite a unity as sex is dependent, at least as to its secondary characteristics and manifestations, on the pituitary as much as on the specific gonad. Weininger, in his postulation of thelyoplasma and arrhenoplasma, suggested that sex differentiation was largely relative, not absolute; quantitative rather than qualitative, and that both male and female had some of the basic element of the opposite sex. He could, however, give no local habitation, even if he did give a name, to the principle of heterosexuality. We have learned that it is probably in the pituitary gland.

It is becoming increasingly apparent, then, that endocrinology is a biological conception which is fundamental and essential to our understanding of vital reactions in health and disease. This alone, I venture to assert, makes it incumbent on us as ophthalmologists to familiarize ourselves with the data already obtained and to apply them intelligently to the recognition, and eventually to the treatment and prevention of ocular disturbances. Recognizing a certain endocrine predominance in definite categories, we shall, as thinking physicians, put a different and an added interpretation on sex, age, race, environment, climate and diet. The term constitutional, applied to disease or to treatment, must include the study of the glands of internal secretion. Such varied factors as specific disease, tuberculosis, rheumatism, focal infections, the lymphatic diathesis formerly labeled scrofula, are not only potent in producing the histological changes recognized so early by the cellular pathologists of Virchow's era; they also profoundly affect the internal secretions and the glands which supply them and so bring about prepathologic or ante-organic changes which those who know can recognize beyond a doubt. Syphilis appears to have an almost selective action (destructive) on the glands presiding over immunity, pigmentation and development of epithelial structures; and the clinical forms of attenuated specific disease, of parasyphilis, or of *lues hereditaria tarda,* are striking manifestations of the truth of this hypothesis. I mention in passing the pigment degenerations of the choroid and retina, the familial types of atrophy, the various nyctalopias, the developmental defects of lens and cornea, and the congenital anomalies of intraocular tension. The acceptance of tuberculosis as a ready-made etiological factor in disease covers a multitude of sins. The close resemblance of incipient phthisis to certain hyperthyroid states and the errors consequent on a disregard of this well established similarity, has its lessons for clinical ophthalmology. The recurrent hemorrhages of adolescence, of which intraocular effusions formed no small part, were attributed, largely on the basis of a positive reaction after diagnostic tuberculin injections, to a purely bacterial or rather to a bacteriogenous origin. We are beginning to recognize the endocrine factor in abnormal vascular reactions, particularly those at puberty and at the opposite pole of sexual function, the climacteric, and to study the applications of these data to the intraocular circulation and intraocular tension.

Here, we may be allowed a word or two on that most dramatic situation in ophthalmic medicine, the acute attack of glaucoma. Former theories of increased intraocular tension have been concerned with purely mechanical factors such as hyperopic refraction, comparatively large lens, a narrow iris-angle, more or less inelasticity of the capsule of the eye, particularly of the sclera. Later, attention was paid to the choroidal vessels, the intraocular lymph circulation, exosmosis and endosmosis, the tonicity and concentration of the intraocular fluids.

Still more recently, colloidal chemistry was invoked, and recognized in glaucoma an essential edema of the vitreous. Endocrinology, or as I prefer to call it, neuro-endocrinology, gladly accepts the truth in all these theories, and adds its own. Glaucoma comes on at a time of life which is characterized by a typical dyscrinism (relative hyperthyroidism); it shows a marked predilection for a race, the Hebrew, which is decidedly hyperthyroidic, emotional and neurotic. The clinical manifestations, the depressions, the intense and radiating pain, the systemic disturbance, vomiting and so on, are signs of a severe endocrine storm. It is striking, and I think significant, that all our therapeutic measures, short of the surgical procedure which is finally invoked as a radical and mechanical measure to change completely the structural conditions of the eye, are, one and all, based on the restoration of the endocrine principles and on stimulation of the vagus. Thus, rest, sleep, heat, hot coffee, morphine, pilocarpine per os and by hypodermic, the instillation of strong miotics. Elsewhere* I have considered more in detail the connotations of endocrinology and the local, pupillomotor reactions of mydriatics and miotics. I may add here that a recognition of a glaucomatous tendency as an attribute of the hyperthyroid individual or age suggests the early use of pituitrin, and the systemic administration of minute doses of the vagotonic alkaloids such as eserin (physostigmin), pilocarpin and possibly muscarin and nicotin. Graves' disease is admittedly a hyperthyroid manifestation. I believe that the excessive sympatheticotonia caused by this condition may lead to either end station, glaucoma or exophthalmic goitre, and that the mechanical, structural, ocular features mentioned above come into their pathogenetic, etiological estate as determinants of the path which shall be taken by the nerve influence. With a vagotonic eye structure, characterized by a stiff sclera, large lens, small pupil, the outcome is apt to be sharp and sudden—the acute attack of glaucoma. With a myopic refraction, soft sclera, large pupil, and deep anterior chamber, the balance of intraocular tension withstands even the excessive demands imposed by sympathetic irritation.

In addition to the systemic and somatic signs of endocrine tendency, we have some fairly definite ocular manifestations. The two types I should like to set up as already established, are the pituitary and the thyroid. The pituitary eye is recessed, enophthalmic, with a small lid fissure, contracted pupil, and a tendency to marked pigmentation and hyperopic refraction. This type shows a vagotonic reaction; that is stubbornness to mydriatics and susceptibility to small doses or weak concentrations of miotics. The vagotonic tendency is indicated further by spasmophilia, expressed as convergent squint, accommodative spasm, blepharospasm, persistent headaches, hemicrania, plastic iritis probably, and often associated with vagotonic (spasmophilic) manifestations at a distance, such as cramps, pylorospasm, rectal tenesmus, constipation, a resistant os uteri, cervix, and perineal outlet, with the danger of fissures and tears. Not infrequently, the temperament is similarly spastic, if I may use the word, and characterized by irritability and stubbornness with their good and bad extremes of artistic and emotional response and persistence, method, and order on one hand, and such things as jealousy, malice and suspicion, on the other.

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*Transactions of the American Ophthalmological Society, Vol. 18, 1920.

The hyperthyroidic eye shows a tendency toward the type seen as a pathological extreme in Graves' disease. Exophthalmos, mydriasis, large lid fissure, vascularity of conjunctiva and lids, and a tendency to epiphora, subnormal accommodation, defective convergence and the various asthenopias. Myopia and lack of ocular pigment are associated, not infrequently, with a tendency to low grade vascular degenerations of the choroid and retina. The sthenic inflammations of iris and uveal tract seem to be comparatively rare. If we are correct in our assumptions, it seems logical to treat our vagotonic, pituitary types, not only by careful correction of refraction error and muscular imbalance, but in addition, by the internal administration, in small doses and over a long period, of the specific alkaloids (miotic or mydriatic, belladonna or physostigmin) indicated by the typical reactions, as well as by more specific endocrine therapy. It has occurred to me that these considerations and observations may help to explain some of our failures, as well as some of our successes, in the treatment of eye strain with cycloplegics. Years ago Gould attributed various ills of flesh and spirit to ametropia, and explained the life tragedy of more than one famous writer by his refraction error. It seems at least likely that the eye strain was in more than one case an expression of the underlying dyscrinism. Undoubtedly, on the other hand, the correction of ametropia and eye strain, particularly at the school age, has a very decidedly beneficial action on the endocrine balance, and so on mentality and temperament. Timme has shown that headache and migraine are frequently of pituitary origin, and it is not too much to expect that the nervous and spiritual anomalies, the tics, habit spasms and disorders of conduct which go with them, may be favorably influenced by suitable pituitary therapy.

The otolaryngological implications of the internal secretions are to be presented to you in detail by the gentlemen whom I have the honor to precede in this symposium. I shall merely call your attention to the association of the lymphatic diathesis, a definite dyscrinism, with adenoids, colds, coryza, and a lack of immunity to the respiratory infections which indicates a thyroid below par. This tendency, so frequent in children, may persist throughout life in hypothyroid individuals. Associated with this feature we have such vagotonic tendencies as eczema, pertussis, asthma, facial tics, and acidosis often expressed clinically in cyclical vomiting, hyperchlorhydria, or rheumatic affections, and markedly benefited by alkalization, calcium, iodine, belladonna and thyroid. Chronic progressive deafness has been brought into relation with endocrine imbalance by Callison and others. The rôle of syphilis in its deleterious action on the inheritance of protective hormones is suggested by the incidence of deaf-mutism, snuffles, defective teeth and corneal changes in *lues hereditaria tarda,* as seen in Hutchinson's classical triad. The relation of the vocal apparatus to sex and its periodic fluctuations is well known. Here again, the dramatic situations, such as eunuchism, have occupied the centre of the stage. The variations within the norm are to my mind worthy of study and will be found, I venture to predict, of at least as much practical value in our appraisal of the individual, well or sick.

Coming to the subject of endocrine therapy, allow me to paraphrase Pope's well-known line and remind you that "charlatans rush in where science fears to tread." Endocrine therapy is not a panacea, or a medicinal get-rich-quick scheme. Much careful study is required before we shall have arrived at a definite conclusion as to ways and means, to say nothing of principles. This, however, should not be held as a reproach to endocrinology, any more than it was a reproach to Harvey that his discovery of the circulation did not at once explain all the blood reactions since unveiled by hematology, or a reproach to Jenner, when he inoculated cowpox on the basis of a definite clinical observation, that all the implications of infection, resistance, immunity and sensitization, were not at once explained or even recognized. We have already in our possession accurate scientific means for determining the endocrine reactions, notably the Goetsch test with adrenalin, Harrower's test with small doses of thyroid, Bendict's determination of basal metabolism, the oculocardiac reflex of Aschner, the determination of blood pressure, of blood sugar and of CO_2 concentration, and in many cases the x-ray plate, particularly in suspected pituitary disease, and in determining the presence or absence of supernumerary substernal thyroids and the factor of a persistent thymus.

Endocrine therapy, further, must be studied with a view to determining the fate of the various gland extracts in the digestive tract and in the blood, at present a *terra incognita* to be explored by the physiological chemists and pharmacologists. We must study, too, the endocrinotrophic peculiarities of acids and alkalis, of calcium and sodium, and particularly of the alkaloids such as belladonna and pilocarpine, to take the representative antagonists, which we recognize now in their functions as vagotonic and vagoparalysant. Finally, we must consider the endocrine factor in diet, exercise, sunlight, rest and sleep, protection from cold and fatigue, in meat and mothers' milk, in emotions, constructive and destructive. We may say that in human life endocrine therapy goes on in spite of us. It is for us to understand and control it.*

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*Recent studies in metabolism and nutrition indicate that the vitamines, antirachitic, antineuritic and antiscorbutic, are probably related to the hormones. The same typical disturbances of development, many of the dramatic ocular defects such as keratomalacia as well as those in teeth, skin, hair and bone are found in avitaminosis, as in disturbances of the ductless glands. In this connection, I have in mind the changes in lens, cornea, retina and ocular pigmentation associated with diabetes, rickets, rheumatism, pellagra, scurvy, and so on.

THE ETIOLOGICAL RELATION OF THE EYE TO THE ENDOCRINE ORGANS*

WILLIAM ZENTMAYER, M.D.

PHILADELPHIA

When your chairman asked me to contribute a paper to supplement the one by our guest, I hesitated to accept, as I knew from Dr. Fridenberg's previous papers on this subject that there would be little for me to add to his brilliant presentation.

As chairman of the Section on Ophthalmology of the A. M. A., I took as the subject of my address "The Eye and the Endocrine Organs," and considered their relation under the heads of experimental and clinical (direct and indirect) evidence and the purely speculative etiology. The speculative side of the question has been particularly discussed by Dr. Fridenberg, and to this I have nothing to add, but wish to express my admiration for Dr. Fridenberg's philosophical and plausible paper. I shall, therefore, consider only the experimental and clinical aspects of the relationship between the endocrine organs and the eye.

Experimental Evidence:

In dogs, extirpation of the thyroid gland is sometimes followed by a porcelain-white infiltration of the cornea which leads at times to ulceration and ectasia. Blepharitis, lacrimation, conjunctivitis and partial blindness without ophthalmoscopic changes, have likewise been noted after removal of this gland.

In the course of the tetany following thyropriva, spasm of the ciliary muscle has been observed.

As a sequel of complete excision of the thyroid and parathyroids interstitial keratitis and bilateral cataract have been seen.

The effect of parathyroidectomy on the calcification of the dentin and enamel leads to fracture of the teeth and to a decrease in lime secretion and bone salts and points to deficient parathyroid secretion as a probable cause of the syndrome of "blue scleras and friability of the bones." There is experimental evidence that many convulsive disorders of man (convulsions of children and eclampsia) are due to parathyroid insufficiency, and from this it may be assumed that a deficient parthyroid secretion has an etiologic bearing upon zonular cataract.

Clinical Evidence:

At present we have no direct evidence that the ocular complications of disease of the pituitary body are produced other than by direct pressure and increased intracranial tension; but the "antecedent amblyopia" of deSchweinitz, the frequent variability and at times transient nature of the disturbance of visual function, the beneficial effect of glandular therapy on the amblyopia in some cases of undoubted hypophysial disease, and the fact that oculomotor disturbances have been met with, due to change in the basal nerves not the result of pressure, suggest that disturbed secretion of the pituitary gland may also be a factor, especially in the early stage of the affection.

Affections of the Thyroid:

The ocular symptoms of hyperthyroidism are too well known to require detailed consideration. There is no constancy in their appearance and they stand in no relation to the gravity of the toxemia. The exophthalmos is of special interest to the ophthalmic surgeon as it may reach a degree endangering the function or even the integrity of the eyeball. Among the more recently described symptoms is one by Suker under the term "deficient complementary fixation in lateral eye rotation," which is sufficiently descriptive of the phenomena. The importance of this sign has recently been emphasized by Jackson and Wilder. Especial mention may be made of the occurrence of an ocular vascular bruit because Riesman has recently again called attention to it, though some contend that the sound heard is not a vascular bruit but is due to the activity of the orbicularis muscle.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Athyroidism:

In myxedema, in which the changes in the thyroid are chiefly atropic, edema of the lids with the consequent narrowing of the palpebral fissures is the most marked ocular phenomenon. The edges of the lids are hyperemic, the eyebrows are elevated, and the hairs and lid cilia are sparse and brittle. Subconjunctival hemorrhages may occur. Lacrimation, asthenopia, neuroretinitis and superior-temporal contraction of the visual fields are occasionally met with. The oculocardiac reflex has been found enormously intensified. This, according to Petzetakis, results from the sympathetic being deprived of the normal stimulation of the thyroid.

In cretinism, which has been called juvenile myxedema, along with the ocular symptoms met with in myxedema there is a wide spacing of the eyes.

In Mongolian idiocy, suspected by some to be of thyroid origin, the eye symptoms of epicanthus and convergence of the palpebral fissures have given the name to this affection.

Interesting clinical evidence has been contributed by Krauss that thyroidectomy may be complicated by papilledema. The operation was followed by a toxemia which induced tetany and the ocular condition was observed eight weeks after the operation.

Westphal and also Schiller saw bilateral cataract follow thyroidectomy. In both instances tetany preceded the development of the lenticular opacity. The occurrence of tetany in all of these cases suggests that interference with the parathyroid was probably the essential factor in the postoperative symptoms.

A note of warning has been sounded against the tendency on the part of enthusiasts to link up the endocrine organs with the etiology of obscure diseases. No doubt this adverse criticism is justified. Nevertheless only good can result at this time from calling attention to suggestive symptoms which have been noted in some eye conditions, the etiology of which up to the present has been in doubt.

Fisher believes that so-called hereditary optic atrophy is primarily due to an inherited temporary disorder of the pituitary body. He bases his assumption on the neuropathic type of the affected individual, the similar symmetrical field defects noted in some cases, the occurrence of subjective phenomena of light and colors, the epochal relation between the onset and the period of puberty and the climacteric, and that in both conditions, frequently in the early stage of the disease, a very mild papillitis may be detected. In one instance a honeycombed shadow in the depression of the sella turcica was found. About two years ago I reported the roentgen ray findings in two families in which certain members were affected with Leber's disease. Dr. Pancoast, who made the roentgengraphs, concluded "that as each of the four cases showed a pituitary fossa which was either at the border line of being abnormal in size or was slightly past this point, it would seem as though a pituitary enlargement might be regarded as the possible cause of the condition." Since this study was made, other cases have been reported, some of which supported, while others failed to support these findings.

My own views are that our data are insufficient upon which to draw conclusions. Aside from the fact that normal fossæ must vary greatly in size and often overstep the limits set as a maximum normal, our present knowledge of heredity in connection with disorders of the pituitary body are too vague to permit of assertive statements.

Pigmentary Degeneration of the Retina:

Jones believes there are general as well as ocular symptoms indicating disturbance of the ductless glands as the cause of pigment degeneration of the retina.

Amaurotic Family Idiocy:

The myasthenia, the periodic convulsions, the familial type of the disease, together with the fact that lesions have been found in the suprarenals, thymus and thyroid, and furthermore that the symptoms of Sach's disease resemble those resulting from epinephrin insufficiency have led Sajous to the belief that the disease is produced by a toxin which provokes organic lesion in the ductless glands, particularly the suprerenals.

Recurrent Retinal Hemorrhages of Adolescence:

In April, 1920, I read before the New England Ophthalmological Society a paper on "Recurrent Retinal Hemorrhages of Adolescence," in which I stated that, while I do not wholly reject the tuberculous cause of this disease, I do think some other factor must be found to explain the striking characteristics of this group of cases and that this may be found in the adrenals (or other of the ductless glands), whether acting independently or in conjunction with tuberculosis. Later in the same year Fridenberg, in discussing Davis' paper, suggested disturbance of the pituitary gland as the cause.

Glaucoma:

Klezkowski claimed, as the result of biological and chemical tests, to have found adrenalin present in the blood of glaucomatous patients. Later investigations by Löhlein, Vogt, Jaffé and Kusama failed to confirm such findings (Elliot).

THE ROLE OF THE THYROID GLAND IN OTOLARYNGOLOGY*

HENRY A. SCHATZ, M.D.

PHILADELPHIA

Marked progress has been made in recent years in our knowledge concerning the ductless glands, their functions and disturbances in their secretion. Hitherto it was chiefly the general constitutional effects of their dysfunction that were studied, while too little attention was given the concomitant effects on the special sense organs. Is it possible that the suppression, for example, of the secretion of the thyroid gland can produce such profound effects on the organism as evidenced by the cases of myxedema and cretinism, and yet spare the organs in which we otolaryngologists are particularly interested? Assuredly not! And yet, what mention of these organs do we find in the older textbooks on medicine? None!

A review of the pathology[15] induced by the athyroid states prepares us to receive without surprise the statements that epistaxis and bleeding gums are commonly observed in cretinism as well as in myxedematous infantilism, and that hemophilia, transmitted through the female line, is frequent in the latter. Likewise, a high-pitched feminine voice occurs in adult male sufferers from myxedematous infantilism. Deaf-mutism is spoken of as one of the congenital manifestations of endemic goitre in goitrogenous districts and McCarrison[15] attributes it to developmental defects due to congenital inefficiency of the thyroid mechanism.

In an effort to systematize the many otolaryngological manifestations encountered in the literature of hypothyroid and athyroid states, the following classification has here been adopted: I, Hemorrhage, Epistaxis; II, Affections of the Nose and Asthma; III, Affections of the Mouth and Fauces; IV, The Tonsils and Adenoids; V, Headache and Migraine; VI, Affections of the Voice and Larynx; VII, Affections of the Ear and Deaf-mutism.

I. HEMORRHAGE, EPISTAXIS

Hertoghe,[10] Leopold-Levi[12] and Sajous[20] are a few of the authorities who regard hemophilia, hemorrhages, hemoptysis, epistaxis, hemorrhoids, varicose veins as clinical manifestations of athyroidia or hypothyroid states. Sajous states that the blood is poor in fibrin-ferment. Callison[6] states that the coagulation time is prolonged and bleeding occurs in thyroid deficiency, and advises thyroid extract medication until the coagulation time becomes normal, before operating on tonsils and adenoids.

II. AFFECTIONS OF THE NOSE AND ASTHMA

There is congestion of the mucous surfaces and nasopharyngeal mucosæ through local germ action and often also turgescense owing to passive congestion of the underlying tissues.[20] In myxedema the nose is cold, the tip being somewhat cyanosed and appears broad and flattened.[20] The senses of smell and taste[22, 16] are commonly impaired or perverted, a bitter or acid taste and foul odors are complained of.[20] In the cretin we behold the saddle-back or depressed nose, the wide and thick alæ.[20] A constant nasal secretion occurs, with snuffling and snoring, due in part also to the affected uvula and tonsils.[14] Other writers[7, 16, 22] describe the mucosæ of the nose as being yellowish, thickened and gelatinous, due to the infiltration, with a special liability to inflammatory states, e. g., rhinitis, bronchitis and dyspnoic attacks which may be mistaken for asthma.[16, 10, 12, 5, 6] Coryza, or profuse nasal catarrh, is regarded as a symptom of commencing intolerance to thyroid medication (iodism); also painless enlargement of the glands at the angle of the jaw.[16] Launoy[13] states that in congenital myxedema the mucosæ are dry, due to atrophy of the glands that normally moisten the mucosa, whereas, by another author atrophic rhinitis is likewise explained.[2] In adult myxedema there is excessive activity of the nasal mucous and salivary glands, according to one writer, so that they secrete at the least excitation, e. g., cold or emotion.[13]

III. THE MOUTH AND FAUCES

The high arched palate in children is regarded as frequent in hypothyroid cases.[8] The mucosæ of the mouth and fauces are whitish, the uvula and tonsils swollen in myxedema,[14, 16] the tongue is thick and flabby, and the mucosæ of the cheek and tongue are indented by the teeth. There is biting of the cheek, erosions of the buccal, pharyngeal and laryngotracheal mucosæ,[20] while tumefaction of the tongue, palate, etc., render enunciation thick and jerky, or produce a nasal twang.[20] The swelling of the faucial and esophageal mucosæ sometimes render swallowing difficult.[10] Again, this difficulty may be due to parathyroid deficiency, causing irregular spasmodic contractions.[9]

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An unusually thick tongue, interfering with respiration in the recumbent posture in a child may indicate cretinism, in an adult hypothyroidia, and is relieved by thyroid medication, not by tonsillectomy.[6]

IV. THE TONSILS AND ADENOIDS

The tonsils may contain the focus of infection responsible for thyroid gland dysfunction. Therefore tonsillectomy is advised in goitre (see Bert Shurley[21]). On the other hand, we find enlargement of the tonsils and adenoid growths mentioned as manifestations of sporadic cretinism, so that these patients snuffle and snore; likewise in myxedema the tonsils and uvula are swollen, hindering nasal breathing.[14, 16] The "adenoid facies" is in the opinion of Cobb[5] really the "subthyroid facies." All victims of infantilism show considerable hypertrophy of the tonsils and adenoids[16] and they suffer from chronic painful tonsillitis,[10] as do all victims of hypothyroidia,[12, 20] with a predilection to acute inflammations of the throat and nasopharyngeal mucosæ.[19, 20] The backward, slow, lazy, dull child at school is a "hypothyroid" child, and is abnormally stout.[20]

Conversely, acute tonsillitis,[16] diphtheria, and acute rheumatic fever[6] are among the diseases which have a deleterious effect on the thyroid, leading to hypothyroid states. So, certain maladies are believed to induce a predisposition to Graves' disease, e. g., acute tonsillitis in the opinion of Robert McCarrison.[16] He likewise mentions mouth-breathing and snoring, adenoids and lymphatic enlargements in minor congenital hypothyroidism. So does Dr. Leonard Williams, and advises thyroid extract in all cases where actual disease of the tonsils and ears has not yet developed. The former (McCarrison) advises his intestinal goitre treatment with antitoxic and antiseptic agents also. Marine and Lenhart[17] group together goitre, lymphoid hyperplasia, lymphatism, rickets and chlorosis as results of common causal factors. McCarrison[16] divides the causes of morbid conditions of the thyroid into three classes: (a) nutritional, (b) infectious, and (c) psychic. Lack of time prevents further discussion upon these points.

V. HEADACHE AND MIGRAINE

Headache accompanied by ear noises may be a primary symptom in exophthalmic goitre[2] though we are not discussing this affection here. Migraine and neuralgias are hypothyroid conditions[20, 21] and are apt to occur at the time of menstruation because of the excessive drain upon the thyroid secretion.[10] Frontal and occipital headaches, worse in the morning, and very persistent, are a hyperthyroid condition aroused in a hypothyroid case according to Leopold-Levi.[12] According to Sajous[20] severe occipital pain is a prominent symptom of hypothyroidia. Headache is frequent in myxedema, suggesting nasal disease, when located in the frontal region,[7] but usually it is occipital, and worse in the morning.[16]

VI. THE VOICE AND LARYNX

The persistence of the high-pitched feminine voice in myxedematous infantilism of male adult age has been mentioned.[13] The mucosæ of the larynx are thickened and produce raw voice changes, and singing is impossible;[20, 21] also the laryngeal muscles may show insufficiency with resulting dyspnea.[21] In hypothyroidia the voice has a nasal twang, due to congestion of the underlying (submucous) tissues, which narrow the nasopharynx; or it is husky or veiled. Especially during the menses the singing voice will be false, with a "crick" in the larynx. Edema of the larynx is not an infrequent cause of death in myxedema.[20] A low, coarse voice—a masculine voice in a woman—is mentioned by Sajous[20] and McCarrison.[16] A loss of the high notes may be an early sign according to Granger (quoted in [16, 6]). An irritating cough may exist.[16, 6] Barker[1] speaks of parathyroid insufficiency as a cause of manifest or latent tetany, with laryngospasm as a symptom of the former, and hyperexcitability of the nervous system with attacks of tonic spasm in the latter.

VII. THE EAR AND DEAF-MUTISM

The incidence of deaf-mutism in goitrous districts has already been mentioned. Myxedematous cretins are commonly deaf-mutes or defective in hearing[13]—87% according to McCarrison,[16] who attributes it in part to the infiltrative condition of the tongue, aural mucosa, eustachian tube and nasopharynx, but mainly to imperfect development as well as infiltration in the higher brain centers, and to a lack of receptivity of the nerves. It is more common in males. Disturbances in hearing resulting from swelling of the eustachian tubes are rapidly improved by thyroid feeding in sporadic cretinism, not so in endemic cretinism,[14] whereas the same author quotes Hammerschlag as reporting in endemic cretinism changes in the peripheral ear.

In the hypothyroid patients noises in the head are due to infiltration of the nerve;[10] even hallucinations of hearing, as of sight, may occur, simulating various sounds, due to lost vascular tone and imperfect circulation.[16, 20] Vertigo, loss of equilibrium, even falling on slight provocation may occur.[16]

The auricles in myxedema are enlarged, the auditory meatus narrowed by its thickened walls, causing more or less deafness,[6, 20, 22] vertigo, tinnitus. Also in the cretin the ears are swollen, erect,[20] and deafness occurs from adenoids or middle ear disease.[7] Swelling of the mucosæ of the pharynx and ear are considered the cause of deafness and tinnitus in myxedema by G. Dock[7] and others.[6] Lynah is quoted as advocating thyroid extract in chronic catarrhal otitis media in elderly patients. Sajous[19] considers the nerve deafness of old age and of acute infections as due to thyroid and adrenal deficiency, and he advises thyroid extract grain 1 with calcium lactate grains v, t.i.d. after meals. Gordon[8] thinks he found normal hearing (the tests admittedly unreliable) in all of his fifty-five cases of hypothyroid children. Callison[24] in a later address formulates the term "Progressive Systemic Deafness"—a pluriglandular dyscrasia with associated symptoms and signs in practically every tissue of the body, and includes therein the three types of progressive deafness with tinnitus—chronic catarrhal otitis media, otosclerosis, and nerve deafness. The thyroid and interstitial cells of the sexual organs are usually responsible, but the adrenals or pituitary may also be in others.

DIAGNOSIS

How is the laryngologist going to recognize the case of hypothyroidism? Examination of the nose, throat and ear alone is not sufficient. Acute observation of the individual's personality and general physical characteristics is necessary for a diagnosis in the majority of cases. Take, for example, the "larval" group, first well described by Hertoghe and again by Sajous[19] in which the patients as a class are described as torpid and morbid, languid, constantly fatigued, somnolent on rising, all symptoms tending to disappear as the day wears on. Sometimes there are headache and backache, usually between the shoulderblades, or sacrolumbar pain which rest in bed tends to aggravate. The temperature is low, hands flabby, cold and somewhat damp, as are apt to be the feet, flat-foot being common. The skin is sallow, pale and waxy; they look older than their years, suggesting renal trouble. Alopecia, beginning at the forehead and extending toward the occiput is common in adults, the hair in marked cases being dry, coarse and brittle. The eyebrows are shortened at the expense of the outer third (eyebrow sign of Hertoghe)—a very constant sign. These early manifestations of the condition are well grouped by Callison[6] under three headings: (1) The hair, (2) Circulation, (3) Gastro-intestinal tract. We learn that the eyelashes may fall out, and the hair be prematurely grey. The alopecia may affect, first, the forehead; second, the nape of the neck; later the axillæ and pubes. Additional circulatory signs are slow pulse, low blood pressure, and a constant sense of chilliness. In the last group of symptoms he mentions constipation (not relieved by diet or exercise), and a large flabby tongue, indented by the teeth. The last is a constant and early sign of thyroid deficiency. Also frontal and occipital headaches occur, with exacerbations in the early morning. The teeth tend to become carious, loose, prone to tartar deposits and pyorrhea.[19]

The cases above described are particularly liable to nasopharyngeal infections with aural complications through the eustachian tubes, due to lowered germicidal activity of the vault.[19]

Under etiology we must not forget the importance of fright, shock and worry.

PATHOLOGY

The keynote to the pathology (as well as symptomatology) is "infiltration." Hence, the large flabby tongue; hard, elastic inferior turbinates; thickening of the laryngeal and bronchial submucosæ; hypertrophy of the tonsils and adenoids; thickening of the lining membranes of the tympanum, middle ear, and eustachian tubes.

Sajous[19] intimates that there may be some connection between otosclerosis and the thyroparathyroid mechanism, through their control of calcium metabolism. The same author and others regard the thyroparathyroid mechanism as the opsonin of the body, and also as controlling the coagulability of the blood.

TREATMENT

Diet: Hertoghe[10] recommends that these patients eat everything, even meats, but little sugar and no alcohol. McCarrison[15] and Leopold-Levi[12] exclude or limit meat or excess of nitrogen, alcohol and common salt.

Baths: Cold baths are interdicted by Hertoghe and Leopold-Levi.

Removal of the causative factors, whether nutritional, infectious or psychic is advised (see Callison[24] and McCarrison & Callison). McCarrison lays most stress on intestinal focal infection, urging that all approved methods be employed to eradicate it, then giving thyroid extract in doses of grains ½ to 1 at bedtime in adults or in divided doses through the day; while in children grains ¼ at bedtime or grains ⅛ twice daily may be given. His method is to keep to the smallest effective dose, rarely more than grains v daily, and to reduce the dose in hot weather and in the old, or during menstruation. (Leopold-Levi.) Sugar in the urine or coryza are evidence of too big dosage.

Hertoghe considers the weighing machine the most important guide as to dosage. His scale of doses is larger than that of the former writer.

Leopold-Levi begins with fractional doses at intervals of days, gradually shortening the interim and later increasing the dose. Sajous in myxedema does likewise, only employing larger doses, t.i.d., then increasing the dosage. Exertion must be avoided during thyroid medication, because there is danger of heart failure.

Callison[24] in his article on "Progressive Systemic Deafness" strongly opposes politzerization, but recommends removal of foci of infection, supplemented by early treatment with endocrines. He uses an "adrenospermin" compound in the so-called "thyroid type" of patients. If both thyroid and pituitary symptoms occur, he begins with mixed gland substances. In postmenopausal cases with high blood pressure, he uses sex gland to reduce the blood pressure. Pancreas and placental substance are also mentioned as reducers of blood pressure. He considers the blood pressure as the key to the medication. For low blood pressure he adds adrenal gland; for high blood pressure, thyroid and sex gland, increasing the sex gland as the blood pressure rises. Because of the prolonged treatment necessary, he advises small doses, e. g., ⅛ grain thyroid, or even less at the start, interrupting the medication for eight to ten days, or more each month, particularly in the female during menstruation.

DRUGS

It seems that certain drugs have a special value in hypothyroid cases. In the cretin Sajous advises, in addition to the thyroid treatment, syrup calcii lactophosphate, also thymus gland. Bicarbonate of soda is recommended by some (Leopold-Levi and McCarrison), whereas arsenous acid (McCarrison), calcium iodide (McCarrison), calcium and strychnin (Leopold-Levi) are mentioned by others as aids to thyroid gland function, while mercury (grey powder) is lauded by McCarrison.

The thyroparathyroid mechanism is the opsonin, and given any deep-seated aural trouble not cured by local measures, thyroid extract or iodine in some form must be resorted to, according to Sajous, remembering that endocrines are contraindicated in acute febrile conditions associated with destructive inflammation in the tympanum, because they increase proteolytic action; also that thyroid must be avoided in weak heart; and when the blood pressure is low, to give hypophysis sicca grains 1/10. In acute suppurative otitis media due to causes other than the acute febrile infections, thyroid or adrenal deficiency may exist. Local heat—our valuable aid in acute otitis media and mastoiditis—is active by hastening the local germicidal action of the endocrines.[19]

Indolence in healing in both acute and chronic otitis media or mastoid affections is an indication for the administration of thyroid gland, with hypophysis sicca or suprarenal gland as aids to local medication. Calcium lactate (grains v, t.i.d) enhances endocrine action in these cases.[19]

CLINICAL STUDIES

(1) Vasomotor rhinitis in my experience was usually made worse by thyroid extract, with one exception—a woman suffering from chills, sneezing and constant watery secretion during all seasons, who claimed that two weeks of thyroid extract had stopped her chills and nasal trouble.

(2) Tinnitus, when due to chronic catarrhal otitis media, associated with a thick, bulky tongue, in a podgy individual, was relieved by thyroid extract after less than two weeks' treatment, whereas the usual treatment with inflation for six months failed to give relief. Tinnitus due to nerve conditions was not improved by thyroid.

(3) Dyspnea in a moderately obese woman past 40, with a very thick, bulky tongue, was relieved by thyroid medication.

(4) One patient who for twelve years was suffering from pains in the mastoid region, associated with a chronic discharging sinus from a depressed unhealed mastoidectomy wound, was promptly relieved of her pains and the discharge ceased after one week's thyroid medication.

Experimental thyroidectomy in the rat gave results that were not uniform. Grossly, the operated rats were heavier (11 grm. to 21½ grm.) than their controls, although they were of the same litter. The length of time they were allowed to live after the thyroidectomy, was governed by the time of the present meeting, viz: about three months. In the opinion of Dr. Frederick S. Hammett, of the Wistar Institute, who helped me with his advice and instruction in thyroidectomy, this was sufficiently long to allow appreciable changes in the tissues to develop.

The tongues of these rats showed no pathologic infiltration. If the larynx of one operated rat showed some edema, the control showed some lymphocytic infiltration that was not normal. Again, the trachea of one operated rat showed chronic local infiltration and atrophy of the mucosa (i. e., chronic catarrhal trouble) whereas the control showed flattening of the epithelial layer in certain localities, with subacute or chronic inflammation.

In another operated rat (8-O) there was suppurative follicular inflammation, with infiltration of the basement membrane lymphocytes, while the control showed none.

The results in the ear proved inconclusive, because both a normal and an operated rat showed purulent otitis media, with osteomyelitis and purulent labyrinthitis in the operated rat. Another pair of rats (8-N and 8-O) showed unaffected ears.

In one operated rat the nose proved to be the seat of lymphocytic infiltration, whereas a normal rat also showed a catarrh.

Thus it appears that rats, like we humans, are subject to acute rhinitis, tracheitis, and otitis, even though possessed of thyroids not artificially tampered with, and it remains for future experiments to eliminate these intercurrent infections or to discount them in both normal and hypothyroid states.

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DISCUSSION

ON PAPERS OF DRS. FRIDENBERG, ZENTMAYER AND SCHATZ

Dr. Robert Scott Lamb (Washington, D. C.): After the comprehensive presentation of the subject which you have heard it is very difficult for one to find material to use with which to drive home the very important and thorough consideration that this subject needs.

For about eight years I have been interested in it, and more or less of that time I have been prescribing the various substances. Not a day goes by, when I am in my office at all, that I do not have occasion to prescribe some one of the substances, or several, and I prefer to prescribe them in that way rather than any other. I try to make up my mind what is wrong and thereby have some basis on which to work in order that the preparations given the patient may bring about satisfactory results.

I cannot tell you in fifteen or twenty minutes very much as to my conclusions and the manner in which I have arrived at them, but I can probably tell you something. Before that, however, I want to congratulate Dr. Fridenberg on his very splendid and comprehenhive presentation of the subject of endocrinology in its relation to the vegetative nervous system and to some extent to the metabolic processes of the body. I go a little further, however, than Dr. Fridenberg in believing that the endocrine organs have something to do with the difference in structure between a hippopotamus and an elephant. Just what that difference is I may have decided in my own mind—but of course it is ridiculous to present that—except that I believe this matter of endocrinology is so much more extensive than most folks have ever thought it to be.

The vegetative nervous system must be studied, as well as the endocrine organs, because they are sometimes so closely related that it is difficult to tell where the symptomatology of one begins and that of the other ends, which is the cause and which the effect. There was published in 1913, by Eppinger and Hess of Vienna, a very excellent article on vagotonia. Some of you have seen reference in the literature to vagotonia, but I doubt if very many have taken the trouble to look it up and see what vagotonia really is. Dr. William A. White, of the Government Hospital for Insane, has translated this article, so it is available to everybody. But even with a knowledge of the fundamentals as to the morphology of the endocrine organs, as much physiology as you can ascertain from the literature, and the histologic and pathologic side of the changes that have taken place, one is hardly in position to begin to prescribe endocrine substances broadcast as suits his convenience or according to some particular authority. I think there has been too much of that kind of prescribing in this country, and it has already brought about a slight reaction against endocrinology. One or two very prominent physicians have cast aspersions upon the prescribing of endocrine substances with that as a foundation for their arguments.

Doctor Fridenberg referred to the esophorias as associated with vagotonia. We have known for years that giving tincture of belladonna internally to patients with esophoria has been very beneficial, but we did not know the reason why. In the sympatheticotonic type with exophoria, if the theory is worth anything, small doses of pilocarpin ought to be useful. With posterior pituitary administered in these cases I have obtained excellent results.

In speaking of glaucoma the Doctor did not go into detail as much as he has in his mind, I am sure, but I have found that in acute inflammatory glaucoma I have been able to control the attack immediately, without operation, by the hypodermic injection of 1/10 grain of pilocarpin with five drops of a 1 to 1000 solution of adrenalin chlorid.

In the beginning of senile decay, as was suggested by Dr. Schatz, in hypothyroid cases, the use of thyroid substances has been very beneficial.

There is another side to this subject which has hardly been touched upon, and that is the effect of the mental attitude of the patient towards his environment at the time you first see him. You will find, if you are going to get results in the handling of these vagotonic cases, that you have to search out all possible sources of the anxiety which holds the patient in the almost vise-like grip of the vagus nerve, and help to bring that something into the open where the patient can see it as you do. Many times the anxiety will disappear.

That is going just a step farther, you see, but it is in line with the practice of medicine—with which many specialists have apparently forgotten they are associated. The attitude has been to specialize and get away from the practice of medicine. You cannot do it and get results. Why does that man become a consultant? Simply because he has more points of contact not only with his patients, but with other things; he is familiar with the literature not only of his own branch, but collateral literature. It is within the realm of many men to get that consultation practice, but they are indifferent—maybe temperamentally so because of their endocrine organs. Nevertheless they do not do it.

Now as a means of showing you the wide scope of possibilities in the prescribing of endocrine substances in connection with the eye, I shall venture to ask you to mention any ocular disease which is troubling you, and see if there is not something in the way of a substance which can be given your patient.

A Member: Uveitis.

Dr. Lamb: Uveitis of course presupposes that the vascular structure of the eye is involved. Consideration of the age of the patient would, therefore, be necessary. That might have some bearing. The duration would have some bearing, because if it is the chronic type your treatment would probably differ somewhat. Is it the chronic or acute uveitis?

A Member: Chronic type.

Dr. Lamb: The chronic type occurs more often, of course, in persons who have had a great deal of systemic toxemia, so that one of the things you must do is to rid the sytem of the toxemia. This involves the metabolic side of the question, as Dr. Fridenberg has suggested, and an alkalizing substance is the best remedy I can think of. The solution I suggested some time ago—sodium carbonate five grains and sodium chlorid ten grains, in a glass of water, every two hours—is good. In addition to that I would use thyroid substance. It may seem a little strange, but in my estimation the thyroid has something to do with the circulation and the secretion of the fluid from the ciliary processes, so we must improve the circulation and improve the secretions. Now, if the patient is an elderly person, possibly with an arteriosclerosis, by reducing the blood pressure with our thyroid substance we improve the metabolism of the body. There are two endocrine substances which improve the metabolism: one is the thyroid and the other is the posterior pituitary. You probably are in the habit of giving iodides. They have been given for years, when I believe thyroid substance would have done better. It was the iodine in the thyroid that did the work. It is the iodine in the system that gets into the thyroid and makes it easy for the thyroid to secret an abundance of substance, so causing a change to take place.

A Member: Optic neuritis.

Dr. Lamb: There you have a very important condition, but you did not say what kind, and I am at a loss to know just what you mean. Do you mean acute optic neuritis?

A Member: Yes.

Dr. Lamb: The asthenic type. Well, if you have eliminated your other causes, you will find that looking after the gonads and the posterior pituitary will probably bring you out. I have had such cases; one that was having brain symptoms, brain tumor, projectile vomiting and constant headache and all that sort of thing, and in three weeks the patient was all right, moving around and going to dances. In this case there was a definite picture of double choked disc—the sight of one eye was completely gone and the other eye was seeing only about one-third of what it should. This was a striking case. I had no idea of mentioning it, but it shows what can be done. I reported that case in Pittsburgh in 1917.

A Member: Recurrent herpetic keratitis.

Dr. Lamb: That as a rule is not particularly troublesome. In the first place, recurrent herpetic keratitis always occurs in the patients who are getting along in years. Practically no young persons have it, so it is one of the decay conditions. If you seek out the source, such as removing dead teeth and looking into the sinuses, hunt out some source of infection and label it, it might have some effect on the nerve. When you have done all that I think you will find your thyroid substance, together with a little gonad substance, will bring things along very quickly and you will practically have no recurrence. I have watched some of these cases and have seen no signs of it in five or six years.

So if you can figure on these intricate things as being relatively simple, you can see how simple the ordinary things we meet with in everyday practice become, and you can feel you have some mastery of the subject, with the help of endocrinology.

Dr. George M. Coates (Philadelphia): I have been interested in this subject of the dysfunction of the endocrine glands for years, because it has seemed to me that there must be some underlying principle to account for the so-called sensitized states, as in hay fever, asthma, and certain types of nasal trouble. We have been able to prove pretty definitely that these conditions are caused by protein substances, but why should one individual be more sensitive than another? That has not been settled definitely. Some dysfunction of the endocrine glands, it is reasonable to suppose, is the cause of these things. Why should we suppose so? In the first place, we have known for a long time that in hay fever and asthma the injection of adrenalin will frequently cut short an attack. We should, I suppose, figure that during these attacks there is perhaps a temporary lack of secretion of the adrenal substance, sensitizing the individual. I do not know whether that is original or not, but it has seemed so to me.

Doctor Schatz has gone over the literature very thoroughly. There are but a few men in otolaryngology who have contributed to the study of this subject: Beck, Pollock, Sajous, and one or two others. Selfridge of San Francisco, and Gottleib of New York, have done a good deal of work on the endocrines in hay fever, vasomotor rhinitis and asthma. Both of them believe thoroughly that these three conditions, and associated conditions, are due to some dysfunction of the endocrines. Selfridge reports that in 26 cases of vasomotor rhinitis he found 14 distinctly of that type. Similarly in hay fever, while he does not give the figures, he states that a great many show some signs of endocrine dysfunction. Gottleib of New York, states the same thing.

I think the trouble with the otolaryngologists is that they do not know how to examine for endocrine disturbances. I do not. But we should have coöperation, as the chairman suggested yesterday, coöperation with our colleagues who can make these examinations when we cannot. We can study them and make some sort of diagnosis, but we can always send our cases somewhere where they can be properly gone over.

Sajous brought this subject before the Philadelphia Laryngological Society in 1915 in regard to hay fever. He stated it as his positive belief that the endocrines were the sensitizing agents in hay fever. Shurley, before the Section on Laryngology of the American Medical Association in 1916, took a little different view in his discussion of the subject—rather the reverse view, his belief being that thyroid dysfunction came largely from diseased tonsils and adenoids and infection of the sinuses. Whether it works out in a clinical way I do not know. It has been suggested to me in reading these articles that it might—that possibly diseased tonsils and adenoids, or absorption from the tonsils and sinuses may cause the thyroid and other endocrines to dysfunction, and that may react upon the system, giving us these sensitized states.

Prof. J. Van der Hoeve (Leiden, Holland): Doctors Fridenberg, Zentmayer and Schatz exposed the different conditions concerning the endocrine system and their relation to eye and ear in so excellent a way that it is far beyond my praise. But yet I missed one thing—probably Dr. Zentmayer left it out purposely because it is not definitely settled. I refer to the conical cornea. About ten years ago Siegrist, in Bonn, found that conical cornea may be connected with symptoms of hypothyreosis. Since that time many authors have taken up that problem. Some agree with Siegrist's suggestions; others not at all. Von Hippel of Halle, examined the blood of several patients by the Abderhalden test, partly with the support of Abderhalden himself, but they did not yet come to an established conviction.

I became especially interested in this question because I examined a patient with conical cornea. His father and sister had the same disease and he feared that his three children would get it too. The oldest of the three children (twelve years old) had indeed astigmatism of one eye, so that it is probable a conical cornea was developing in that eye. So I had struck on a case of hereditary conical cornea, which is extremely rare. At the same time I saw a girl of the same age with a rapidly increasing conical cornea. We did the Abderhalden test on the blood of the father and child, and of the other patient, with the different endocrine organs. In all these we found a very marked reaction for the thyroid glands, whereas blood of a normal control person showed no reaction at all, so it seemed that in all these patients a dysthyreosis existed.

Now I will not say that I consider this as proof of the origin of the conical cornea in these cases, nor is my faith in the Abderhalden test so great that I am convinced that these patients have a hypothyroidismus, but it is possible. We will try to find out if any extract of endocrine glands will stop the development of the conical cornea in these children, and try to watch the effect of the treatment by repeating the Abderhalden test in due time. It is possible that in this way we may find a remedy for this disease, which up to this time we have not been able to stop.

I believe that it would be necessary in every case in which we suspect affection of the endocrine glands and treat this, to watch the effect with Abderhalden's or a similar test.

Dr. Robert Scott Lamb (Washington, D. C.): I should like to say a word about conical cornea. I happened to have a case of this kind in which there was a band or zone of keratitis about 5 millimeters wide, so that the patient could not see anything looked at, but just got a little peripheral vision with the pupil dilated. The other eye was beginning to be conical, though it had not the opacity. I got to thinking about this keratitis of the zonal type, which occurred just opposite the palpebral fissure, that there was a disturbed nutritional effect going on there; and then I thought of the children I had seen in hospitals and other places with keratomalacia—malnutrient cases—and I figured that this girl was malnutrient. So in addition to the use of pilocarpin or iodine, for the tonic effect on the blood vessels and the improvement of the circulation, I gave her thyroid substance, one-half grain three times a day, nothing more, with the result that the opacity is gone. There is not a trace of it now, and both conical corneas have come down to a normal condition. That to my mind is simply in line with the nutritional processes that take place in the eye because of these endocrine substances. They are, to a certain extent unquestionably, able to control metabolism.

I simply want to put that case before you. I did not make any Abderhalden test. I just went ahead with the thought that the condition was the outcome of nutritional disturbances such as occur in keratomalacia.

Dr. S. Lewis Ziegler (Philadelphia): I want to congratulate Dr. Fridenberg on his very excellent address, and I think we ought to congratulate him, too, on the fact that he has a "projective imagination," which is the greatest faculty that anyone who wishes to advance in medicine or any other science can possess.

I think the problem we are considering goes even beyond the endocrine glands into the sphere of the underlying sympathetic system. The relation between the various endocrine glands is close, for like a pearl necklace they are all strung on one cord, that of the sympathetic nervous distribution. Nor should we forget that all of the lymphatic glands of the body exert an influence on physiologic function, not only the few endocrines but also the millions of minute glands of the general lymphatic system, and it is a perversion of the activities of this whole lymphatic system that causes toxic secretions. What that perversion comes from is often difficult to decide.

We do not know what reflex neuroses are. They are of the most complicated and wonderful nature and have the greatest influence on terminal lymph action. These perverted secretions are the pathogenic factors in the chemotaxis which is so markedly influential in many pathologic processes and the control of which I venture to predict in the near future will become the foundation of the cure of cancer, through neutralization of the chemioal toxins that stimulate new growth. In other words, we will have a chemical cure rather than any other fundamental cure. Even where radium checks malignant growth it destroys glandular action, thus preventing any further formation of perverted secretion and modifying localized chemotaxis. Another factor in this problem is the underlying influence of oxidation. We know that any toxin in the system is reduced in its danger point by oxidation.

Now these dysfunctions which the papers of this symposium have discussed, such as hemorrhages and detachment of the retina, follow disturbances of the endocrine glands. It is difficult to say just why these particular lesions should occur in these selected areas, but I can very positively state that in my experience the influence of thyroid extract on retinal detachment and subretinal hemorrhage is most helpful. Even subretinal hemorrhages that have been in existence for a long time will yield to thyroid extract, preferably in small doses.

The manifestations of chills and nervous irritability that have been referred to should, I think, be ascribed to disturbances of the pituitary body. As a chill occurs shortly after an infection it is a question whether the bacterial toxins are not carried directly to the pituitary body and there cause an immediate reaction.

As to the question of pigmentation: during my early practice I performed certain nasal operations, and I have seen deposits of pigment occur on the temple following two or three such operations. I have also seen a pigmentation or leucoderma follow nasal cauterization.

I have been using pilocarpin in glaucoma, combined with hyoscin, morphin and strychnin, for more than thirty years. Hyoscin given hypodermically will control the attack of glaucoma through action on the sympathetic system without local action on the eye. While there is nothing to my mind so good as hyoscin combined with pilocarpin to relieve an acute attack of glaucoma, we must remember that this is simply an emergency measure and should not be given for too long a time, or it may reach the eye and thus cause mydriasis with increased tension.

Dr. S. MacCuen Smith (Philadelphia): I want to call attention to the connection of myxedema with certain functional disturbances of the ear, and to relate two cases that I wrote something about back in 1909. I will read from a reprint if I may.

One case was that of a woman about 52 years of age, who consulted me with her attending physician, complaining of progressive failure of hearing, severe tinnitus and much difficulty in swallowing. Her face, hands, arms, feet and legs were moderately swollen, the skin being dry and desquamating. She suffered from declining mentality, headaches, and marked nervous irritability. Her tongue was considerably thickened. The entire auricle was swollen, being especially marked at the concha. Her voice was rough and rasping. An examination of the membrana tympani revealed little or no change from the normal. There was, however, a distinct hyperemia of the tympanic cavity, which could be plainly seen through the translucent drumhead. Indeed, the exudate confined in the tympanic cavity reminded one of a case of hydrops ex vacuo.

The other case was a woman about 56 years of age, who consulted me on account of a sudden complete deafness of the left ear, which, however, was secondary to a progressive loss of hearing, bilateral, extending over several months. During the first few weeks she had several attacks of bleeding from the nose and mouth. The tongue was thickened and protruded slightly. The tinnitus aurium, which had been progressive, was most annoying. The pharynx, uvula, soft palate and larynx were edematous, the latter no doubt accounting for the rough, deep sounds of the voice. The condition of the extremities and skin was similar to that in the preceding case, both patients presenting evidence of well-advanced anemia. The nervous phenomena were likewise similar to those of the other case. In this patient the membrana tympani of each ear was decidedly red and edematous, so much so indeed that I deemed it advisable to incise the same, which resulted in the evacuation of some serosanguinous fluid. It is needless to say that both of these cases promptly improved on the administration of thyroid extract, and have since remained entirely free from all symptoms incident to the myxedema. It has been necessary, however, for them to continue taking the thyroid.

The deafness and tinnitus aurium may be due to myxedematous thickening of the tympanic mucosa, or to the formation of myxedematous tissue at the base of the brain, where the eighth nerve is given off. In any event, the symptoms, both general and local, disappear as if by magic on the administration of thyroid extract.

At the same time Dr. Robert Pitfield reported two similar cases which were very much improved by the administration of thyroid extract, both in regard to their tinnitus and their hearing.

In closing I wish also to express the great pleasure and interest this Section has had in hearing the presentation of these papers.

Dr. Schatz (in closing): It seems to me that Dr. Smith was the only one who exactly supported me in the things I said.

When I began the task allotted to me in preparing this paper I knew very little, but I believe I can add that I have found it very beneficial and interesting. It requires observation of parts of the body and organs that are entirely apart from the special sense organs. This is supported by a few factors that we may observe: the tongue, the cold clammy hands, the absence of the outer third of the eyebrow, and in some marked cases the waxiness of the mucous membrane, the tongue and vocal cords.

Basal metabolism is a field in which there is yet much to be done, and it is a complicated field. I believe only two hospitals in Philadelphia are fitted to conduct these tests. Possibly they may come into more common use and be regarded as the scientific method of determining the deficiency or excess of thyroid secretion.

Dr. Zentmayer (in closing): I only rise to say that Professor Van der Hoeve was right in supposing that I left out the subject of keratoconus because it is so unsettled, although had I carried that reasoning to its logical end I would have had no paper whatever. Had I included this subject I would have said that, based on the Abderhalden dialysis method, von Hippel found disturbance of metabolism of the internal secretory glands in two typical cases of keratoconus, and in a corneal condition closely allied to it. The thymus was found involved in all three, and in one solely. In two, the suprarenals gave a strong positive reaction. In one the thyroid gave a negative reaction, in one a doubtful reaction, and in one a weakly positive reaction.

Dr. Fridenberg (in closing): I think Dr. Lamb struck the keynote of endocrine therapy when he deprecated the shotgun treatment. If there is to be any advance we must go slowly and know what we are doing at every stage. We do not know what we are doing if we give even a single endocrine extract. Has any physiological chemist told us what happens to adrenalin, or to pituitrin, or to ovarian extract, when it goes through the stomach? Has he told us what happens to these extracts in the stomach that has too much gastric acid, or too little. Has he told us how a vagotonic stomach reacts to adrenalin or pilocarpin, to thyroid or pituitary extracts? We know very little, and we must know a whole lot more if we are to be effective in our treatment.

There are certain very definite ways of determining what endocrine lack faces us in the patient. I am not speaking of such generalities as stature and the general appearance of the patient. The Goetsch test includes the hypodermic injection of adrenalin, taking the blood pressure before and immediately after. A very sudden reaction indicates that the patient already has an excess of adrenalin, and from that you can go on and determine to a certain extent, I will not say the endocrine balance, but the result on the vagus system or the sympathetic system. So we cannot say that this patient has too much thyroid or too little pituitary, but we can say that the manifestations in this patient are largely vagotonic (spasmophilic) or, on the other hand, sympathicotonic.

A second test is the simple administration of thyroid extract, beginning with 1/10 grain in three doses, and then making a certain and definite test of the pulse rate and blood pressure. We will find that some people react to minimum doses of thyroid, while others can take large doses three or four times a day. That again shows the condition of endocrine balance.

Third is the determination of the sugar content of the blood, and it will show whether or not sugar is retained in the blood. In fact, in a certain pituitary disturbance there is a marked tendency to store sugar in the blood. The blood sugar is determined an hour before eating, then again one hour after the test meal, and two hours after. In a normal individual a very large amount is found after the test meal and that is eliminated. In two hours there is none. But in a certain type there will be as much sugar in the blood two or three hours after the ingestion of the glucose as at the time of ingestion.

There are other more complicated tests, but these two tests, the Goetsch test and the blood sugar, are not difficult, and this applies also to the oculocardiac index of Oschner.

Certain types of children have special disease tendencies. We speak of the lymphatic diathesis, the scrofulous diathesis. The child of a certain make-up will usually have adenoids and large tonsils, there will be a tendency to follicular swelling of the lid and conjunctiva, a condition which is frequently diagnosed as trachoma. These children all lack resistance to disease and have asthenia, pertussis, tics, cyclical vomiting, eczema and frequently recurring infections, a vicious circle being formed, because, as one speaker has told you, the infections knock out the endocrine glands and the thyroid is affected by the infection, and again the lack of thyroid puts below par the normal immunity of the organism to further infection. These children are apt to be pale, fat, sluggish, constipated and do well on alkalies, calcium, iodides and antispasmodics.

A good deal of what we have done has been theoretical. We knew that uveitis was frequently associated with focal infections, and that focal infections in their action vitiate the immunity processes of the thyroid. We have given iodides for years for this condition, and we know that iodine is one of the strongest stimulants to normal thyroid secretion that we have, so there is a perfectly logical connection—focal infections and dyscrinism caused by them, a lack of immunity in the uveal tract and a tendency to repeated inflammation.

We speak of endocrine therapy. Endocrine therapy does not mean the administration of thyroid extract alone. There are certain chemicals and drugs, the alkaloids, which have not only the identical action of the endocrines, but very probably are analogous to the endocrines. Belladonna has been mentioned. In cases of glaucoma we use eserin (physostigmin), and this miotic is also active in slowing the heart rate, in pulling down the sympathicotonus and establishing the balance. I do not know whether the nervous system is behind the endocrine glands, or the endocrine glands behind the nervous system. I believe there is a physiological circle. Crile has shown that endocrine secretions are produced in response to sensory nerve stimulation. Visual and auditory impressions produce a sensation connected with endocrine secretion. The latter produces a reaction in the organism, and this reaction on the stomach and heart and muscles is interpreted by the mind as emotion. He says fear is the interpretation by the brain of a condition produced by poison in the system, and then that poison produced fight or flight reactions in response to fear, anger or worry. So you cannot say what is the beginning or what is the end.

Endocrine therapy includes the use of some well-known drugs. The miotics and mydriatics so largely used in ophthalmiatry are systemically vagotonic and sympathicotonic, respectively. Their end effect is very like that of the endocrine extracts themselves. This also applies to calcium, to iodine, to alkalinization and acidulation, and probably to many other medicaments. The relation of pharmacology to the internal secretions has not been studied sufficiently. Then exercise, sleep and rest, heat and cold, food and drink, and sunlight all have a marked action on the endocrine production and balance; and mode of life, temperament and mental habit affect the degree to which the endocrine system is taxed. Mother's milk itself, if of a healthy parent, contains all the hormones needed for the child, as well as (and this is now known) all the vitamines protecting the offspring against rickets, scurvy and neuritis. We may not always be able to distinguish a decided dependence on a specific endocrine lack in our eye patients, but we can recognize vagotonic or sympathicotonic manifestations and treat with alkaloids and gland extracts. Thus, spasmophilia, showing as eye-strain, blepharospasm, stomach cramps, tenesmus, fits of anger, jealousy, stubbornness, headaches with migraine, asthma, pertussis, dry cough on the one hand, and on the other, asthenopia, increased peristalsis, diarrhea, hypochlorhydria.

Professor Van der Hoeve spoke of conical cornea. It is rather significant that marked disturbances of corneal nutrition as well as anomalies of intraocular tension are found in vitamin diseases and in congenital form on a basis of dyscrinism. In a way this also applies to the development of the lens and its disturbance in rickets, tetany, diabetes, pellagra, and so on. Corneal affections and those of the sclera in general dyscrasiæ, such as blue sclera in *fragilitas ossium*, herpetic keratitis, buphthalmos, keratomalacia, and the association of the latter with night blindness, are suggestive. In most cases there has been shown a lack of the fat soluble vitamin A. This would indicate the administration of cod liver oil, of food fats, and the need of a high calcium diet in such developmental disturbances.

The interrelations of the vitamins and hormones, the endocrinotropic peculiarities of various foods, protein, carbohydrates and fats, in fact, the physiological chemistry of endocrine secretions, is in its infancy. This applies also in part to the question of dosage and administration of gland extracts, and to the effect of minimal doses of alkaloids and other potent medicaments on the endocrine secretions.

FRACTURES OF THE SHAFT OF THE FEMUR*

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Much has been written in recent years on the standardization of the treatment of fractures, particularly of fractures of the shaft of the femur. There are still too many varieties of treatment in vogue and too great a tendency to change for all surgeons to agree on one method, so that each is still forced to think the matter out for himself and assume the responsibility for his decision. In the presence of considerable overlapping of the fragments in adults my present inclination is toward the open correction of the deformity and direct fixation of the fragments because of the failures I have encountered in overcoming the displacement by nonoperative methods. Burghard says: "All surgeons are agreed that no fracture should be operated upon if it can be got into good position and maintained there by other means," and that agreement is now general that "all those fractures should be operated on in which there is no possibility of getting the fragments into good apposition by any other means." Estes, a member of the Fracture Committee of the American Surgical Association, tells us (*Annals of Surgery*, July, 1916) that in a study of 299 personal cases he found by the old methods of extension, external splints, etc., only two per cent of his cases showed accurate apposition of the fragments and in many instances cases which seemed in perfect alignment and showed very little shortening by the usual methods of measuring, when skigraphed exhibited overlapping and poor apposition. Because of these findings he began to practice more frequently the operative methods and direct fixation of the bone. My experience agrees with his and I would therefore especially emphasize the necessity of proving in every case the degree of correction obtained from any method by comparison of the x-ray plates taken before and after the attempts at reduction of the deformity.

In some young children with slight deformity I have been using the Bryant vertical extension method, which probably accomplished little correction of the deformity but tends to prevent increase of the shortening and usually maintains good general alinement of the fragments. One boy with a transverse fracture about the middle of the femur and about a half-inch shortening, was put up in the Bryant apparatus. Beginning on the first day temporary additional traction was applied once on each of three successive days in the following manner: The leg at the ankle was grasped by one hand of the surgeon and the thigh at the hip by the other hand. Gradually in the vertical position the extending force was increased to the limit without causing the patient much if any pain, the hope being entertained that the Bryant extension would maintain any correction thus obtained. When the cast was removed at the end of eight weeks an x-ray was taken and measurement for shortening of the limb. They showed no improvement when compared to the x-ray and measurements taken before the Bryant apparatus was applied. In another boy the deformity was much worse but the Bryant treatment for five days made no improvement in it. Because of a more or less continuous temperature of between 101 and 102 degrees, operation was avoided and a method of extension with plaster cast fixation was applied with much improvement in the deformity, alinement and shortening, but not as good a correction as by operation. This method of plaster cast extension as applied to fractures of the leg was described and illustrated in the *Surgical Clinics of North America* for February, 1921, p. 207. Its application in fractures of the femur is more cumbersome, and less effective than in those of the leg, but in children with troublesome displacements is proving worth while in avoiding operation. There will be much more stiffness of the knee after this and the open method than after the Bryant method, but according to my judgment and experience the stiffness is due chiefly to adhesion of the muscles and other soft tissues to the bones at the seat of fracture, not to arthritis of the knee; so that after the immobilization of the extension cast and open methods there will be more firm adhesions to be broken up or dissolved by exercises. But they yield slowly to ordinary walking exercises except in cases with much displacement and callus and delayed union, when they may not yield.

In adults we have to deal with greater deformity because the fracturing force and muscle contracture maintaining the overlapping are greater. The nonoperative methods generally fail to overcome the muscle contraction. If the traction is efficient the patient cannot stand it, and if the patient is comfortable the traction is usually inefficient. Generally the latter condition prevails and we are contented by the fact that frequently the poor anatomical result is associated with a sufficiently good functional result. On the other hand the only other method of correcting the deformity is the operative, and that brings with it the risk of infection. Pritchard (*N. Y. Med. J.*, April 20, 1921) says "the open operation is seldom justifiable and will probably be used less and less, because of the difficulty in avoiding infection." That was the chief original argument against operation for appendicitis but it has long ago been disposed of. I believe we shall so far dispose of our fear of infection that where we have need of operative methods to correct bad fracture deformity we shall not need to be afraid to employ them.

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The same writer says: "Functional and economic results are far more important to the patient and the world than the anatomic results." But the functional and economic results depend chiefly upon the anatomic results. Ashhurst, another member of the American Surgical Association Fracture Committee, after a study of the end results in 829 fractures of the long bones, says that his study "clearly shows that good function depends very largely upon accurate reduction of the deformity." According to my observations the most promising path of progress, for most adult cases, is in the direction of operative reduction, and for this reason we should not yield to the fear that infection cannot be avoided. The greatest danger comes from operation in the hands of incompetent surgeons but this should not prevent the competent surgeon from forging ahead.

There is no necessity to detail here the technic employed in my series of cases because it has no special advantage over that employed by most careful surgeons. A few features may be mentioned, particularly as many surgeons will not allow them the importance which I attach to them. In the first place the effort is to get to the fragments, do the necessary work on them and get out of the wound with the least possible trauma to the tissues. Very few hemostats are employed and practically no ligatures. The wound is swabbed out with dichloramine-T and only the edges of the aponeurotic deep fascia and the skin are sutured usually with number 2 chromic gut (continuous). The first layers of the sterile gauze dressing are saturated with alcohol and a plaster cast is applied, including the pelvis and the whole involved extremity. As near absolute immobilization of the fragments as possible by internal fixation and plaster cast is aimed at, because it is believed to be an exceedingly important factor in preventing breaking down of the wound. No other explanation is offered for the continued use of dichloramine-T than that the best experience I have ever had in this kind of work began with the first use of it three years ago and has continued with its use ever since. In the past two years I have not had a single infection, not even a stitch infection, although granulation tissue may protrude, and have not taken out the internal fixation plates, screws or nails, except for some special reason, as the breaking of a plate. The fear of infection is no greater from the open method in simple fractures of the femur than in operations on clean appendices or inguinal hernias. Future experience may change this attitude but it has been justified up to the present time by the experience of the past three years.

Ashhurst found that in only 72 per cent of his 829 cases was anatomic reduction accomplished by operation and that if only approximate reduction was obtained, very much better function follows nonoperative than operative treatment. One feels that his cases must include many in which the operative reduction was long delayed and complete anatomic correction of the displacement thus rendered very difficult or impossible. Practically all of my cases were operated on when recent and in them almost perfect reduction was obtained in nearly 100 per cent.

Orr emphasizes the insufficiency of the reports on the length of disability and the ultimate effect upon the patient, and says that one's impression is that open treatment, especially if followed by complications of any kind, very greatly prolongs the period of disability and very greatly endangers the patient's ultimate functional restoration. We probably have not yet fully realized how difficult it is to follow fracture cases long enough and closely enough to provide the kind of information desired, nor do we realize how long a paper must be to furnish it. A paper of this kind will not permit an attempt along this line.

Since October 1, 1918, I have had 56 fractures of the femur, 33 under twelve years of age and 23 over twelve years. Of the 33 under twelve years, 16 were operated on and 17 were not. Of the 23 over twelve years, 19 were operated on and 4 were not. There were, therefore, 35 operated on and 21 not operated on.

Next in importance to infection is the danger of nonunion. Delayed union was relatively much more frequent in my nonoperative adult cases than in the operative. Smith (*Brit. M. J.*, April 2, 1921), writing on the nonoperative methods, says that delayed union is sometimes unavoidable but there is a vast difference between delayed union and nonunion. Stiffness of the knee, while troublesome, is relatively far less important than infection or nonunion. While not underestimating its importance I have lost much of my fear of infection, while with the end-on approximation and good alinement of the fragments afforded by the open method I find it difficult to fear nonunion, and I believe that delayed union will be much less frequent in the future. In six of the seven operative cases of delayed union, reoperation was done, but in not one was it done for the nonunion per se. In none did I saw off the ends of the fragments to favor bony union. Weight-bearing was depended on with the aid of a walking cast or brace, when bony union was slow. In one case another surgeon had operated early without using internal fixation means and a refracture occurred 18 weeks afterwards. Two days later I plated. Bending developed later and a third surgeon sawed off the ends of the fragments and wired. Ten weeks later it was noted that the union was gradually becoming calcified. Recently, two years later, the union was solid, the bone straight, one and a half inches shorter than its fellow, with possible flexion of the knee to about 80 degrees. The patient said he had no trouble with it in his work or anything else he cared to do. In a third case associated injuries, including a crushed chest with a fractured sternum, caused a delay of three weeks in the plating of the femur by another surgeon. I replated 11 weeks afterward because of a broken plate, removing the cast at the end of eight weeks to find slight motion at the seat of fracture. He left the hospital at the end of another week wearing a walking brace, and two weeks after leaving the hospital returned to his work as superintendent of a large stable of horses used for milk wagons. This was nearly a year and a half ago, and he has continued to work since, the brace having been worn only a few months. He now has bony union, three-quarters of an inch shortening, and only about ten degrees flexion of the knee.

The next case, an eleven-year-old boy, had two Parham-Martin bands applied and was permitted to walk at the end of nine weeks. Two months later he was readmitted on account of bending at the seat of fracture, the bands being removed and a long screw being passed obliquely through both fragments. At the end of eight weeks he was permitted to walk in the cast with crutches or without them, as he could, for two more weeks. He developed strong union, one-half inch shortening and normal motion at the knee. Another boy of 14 years had a similar experience with bending and the introduction of a long screw and now has union with slight bending but still wears a walking brace. An ex-service man had a like experience and obtained strong union without the use of a brace but still has considerable stiffness of the knee. A man, 58 years of age, without a second operation, from the use of a walking brace developed bony union with slight bending and about an inch shortening. He has marked stiffness of the knee, and three or four months after operation there appeared about the middle of the inner side of the thigh a very small sinus discharging a very small quantity of serum which has continued about ten months. A boy 12 years old, broke his plate, was reoperated on and developed delayed union but no bending. After wearing a walking brace two months he has no motion at the seat of fracture, no pain or swelling or other evidence of nonunion, and has ten to fifteen degrees of motion in the knee.

The two cases previously operated on by other surgeons with poor or nonunion need not be further discussed. Another of this group, the last one mentioned above, may be excluded because of the broken plate and nonunion. To the remaining four cases I have given most attention. Three of the four were admitted to the hospital within a period of nine weeks and the trouble was first suspected in one when the cast was removed, and in the other two when bending was observed from weight-bearing. It was noted at operation in all three that the screws took hold poorly, probably on account of osteoporosis, very poorly in the one in which the delayed union was evident on the removal of the cast. Another observation seemed to play an important part in this for me new experience. With no infection, a close fitting strong cast from the chest to and including the foot, direct fixation of the fragments by plate and screws, and five or six weeks in the hospital to insure good healing of the wound, I could see no good reason why they would not do as well at home in bed as they would in the hospital. We usually send fractures of the leg home in a cast earlier than this. I did not realize until the delayed unions began to develop that not infrequently one could pass a hand under the cast from the pubic region between it and the thigh, indicating an unsuspected degree of looseness of the cast probably from the atrophy of disuse. I had entertained the impression earlier that such a cast and direct fixation without infection would practically guarantee bony union, but this belief was now destroyed.

Out of my experience with these cases came one conviction as to treatment. With end-on approximation and good alinement of the fragments, weight bearing as with a plaster cast or walking brace will cause bony union practically every time. In the last of the delayed unions so treated to a successful termination, the ex-service man, four weeks after the reoperation with a screw obliquely through both fragments and a close fitting cast from the chest down, was given crutches and encouraged to walk about as much as he could, and was sent home at the end of five weeks to discard the crutches as much as he pleased. There was no further trouble with bending or delayed union. Since then without waiting for delayed union I have followed the same course with all of my operated cases, one adult and three children, and have had no cause as yet to regret it. If weight-bearing induced bony union in the delayed cases it ought to prevent delay in the early stages.

As already stated the stiffness of the knee, in my opinion, is due chiefly to the cicatricial adhesion of the muscles to each other and to the callus at the site of fracture. It should be greater after eight or ten weeks' immobilization of the knee than when the knee is mobilized during the development of union. The prime objects in a fracture, however, are to reproduce the normal condition of the bone by approximation and alinement of the fragments and obtain solid bony union in the shortest period possible. Until we obtain fuller reports on the kind of knee motion obtained by the nonoperative methods of treatment I shall not worry much about the degree of stiffness from the operative treatment. A stiff straight knee is a very serviceable one to begin with and with a progressive improvement toward the normal the patient can afford to wait for the latter if there is a reasonable assurance that it will be reached or approximated. There still remains much to learn of this phase in adults. One case reported by letter nearly normal motion, but I have not seen him. In one of the delayed union cases in which bony union came very slowly there is only about ten degrees of flexion after more than two years. The other cases have varied between these two extremes.

Of my four nonoperative cases in adults, one young man with slight deformity had an ordinary cast applied on a Hawley table under traction which accomplished no reduction. He had an excellent result with the original one-half inch shortening, and a year and a half after the accident had flexion of the knee to about 60 degrees. A woman, 23 years old, came under my care two weeks after the accident with the typical displacement of a supracondylar fracture and about an inch shortening. Ice tong traction on a Thomas splint accomplished end-on approximation of the fragments in two weeks more, but six weeks later still bony union had not occurred. The ordinary cast from the chest to and including the foot was then applied, and she was sent home to remain in bed three weeks, when she managed to get up on crutches and walk about first with the crutches and later without. The cast was removed at the end of three months, when she had bony union. Now, one year after the accident she has flexion of the knee to about 100 degrees, and ⅜-inch shortening. In a colored man, 71 years old, the traction was not successful and he still has his original overlapping of one and a half inches with about an inch increase, probably from weight bearing, but now has solid union and flexion of the knee to about 80 degrees, two and a half years after the accident. In a man, 58 years old, of very poor nutrition and extensive chronic ulceration of the leg on the side of the fracture, plaster cast extension accomplished almost complete removal of the about two inches overlapping of the fragments, but this could not be maintained because of the poor nutrition of the limb. He has since been treated elsewhere for another fracture of the same femur much higher. Now, about a year and seven months after the accident, he has four inches shortening, the original two inches overlapping having been increased about an inch, the remaining increase being due to the higher fracture, and he has flexion of the knee to about 80 degrees. The real problems in these fractures are associated with adults, and with the open method without infection they are all readily solved, except for the stiffness of the knee.

With the children it is a different story. Neither delayed union nor stiffness of the knee has given any trouble, except in the eleven-year-old boy, who later developed strong, bony union, and now, about a year after the removal of the cast of the reoperation has normal knee motion. In the children in addition to operation and plaster cast extension, as already stated, I employed Bryant's vertical extension. To the ordinary observer the results of all three methods were equally good. The real question here is as to what should be considered satisfactory. The Bryant method had the advantage in gaining early mobility of the knee. There was very little stiffness remaining when the apparatus was removed. But the correction of deformity by this method was practically nil. The best excuse for employing it is that the deformity in young children is slight, probably because the fracturing force from the fall is slight, and may therefore be ignored. But the child is a more important patient than the adult because he has greater prospects. Who can judge what an inch shortening may mean to such a patient? It will surely mean more to the highly skilled and intelligent than to the less skilled and intelligent. A professional baseball player found that his batting average dropped materially after a fracture of the leg with an inch shortening, and he soon afterward gave up professional baseball. He found himself unconsciously scraping up dirt to raise the shortened side in order that he might get his normal focus on the pitched ball and be ready for the "break" or sudden curve of it. He observed other difficulties, but this is sufficient to suggest the possibilities of shortening following fracture. With plaster cast extension there was usually no shortening and sometimes a quarter-inch lengthening, but good approximation of the fractured surfaces could not be made, although this was improved and the alinement of the fragments was excellent. By operation the approximation of the fragments was practically always perfect and the alinement of the fragments perfect. The plates and screws were not removed because they gave no trouble, but their removal would be easy and safe at any time.

CONCLUSIONS

1. We are not yet ready for a standard method of treatment which will probably come only after a slow process of elimination.

2. The functional result depends chiefly upon the anatomical result, although a good functional is frequently obtained without a good anatomical result.

3. The Bryant extension is justifiable in young children because in them the deformity is usually slight and may be ignored. Its influence in overcoming overlapping of the fragments is practically nil.

4. The plaster cast with extension usually overcomes the overlapping almost entirely in children but does not provide good apposition of the fragments in femur fractures.

5. The open method gave the best anatomical result but left in the fixation material, although this can be removed easily at any time.

6. There was only one infection in the 35 cases operated on (2.9%). Delayed union and stiffness of the knee in the adult cases gave most trouble, although bony union was developed later in all except two cases, which are still too recent for determination, but seem to show bony union now.

7. Stiffness of the knee is the lesser of these two troubles and will probably give way slowly to ordinary use in most if not all cases. The rapidity with which motion of the knee can be made to return will probably be increased when the greater dangers of mal- and nonunion and infection have been more definitely eliminated.

8. We should be satisfied only with the best functional result. Since this depends chiefly upon the anatomical result we should direct our attention to the anatomical and strive less to cover up poor anatomical results by talking only of functional results. The open method gives the best anatomical result, especially in adults. Only the fear of infection stands in the way.

DISCUSSION

Dr. William L. Estes (Bethlehem): This discussion is of such interest to those of us who have been in fracture work that it is very difficult to determine what one would like to say in five minutes.

It is almost impossible in civil practice to standardize any sort of fracture apparatus, or any sort of fracture procedure. The experience of the last war has taught us that the nearest thing to a standard apparatus, especially in fractures of the femur, is a Thomas splint. In civil life we have proved this as well as in the exigencies of war. Unquestionably, instead of the old Buck's extension with straight position, the flexed and elevated position, which may be obtained from the combined use of a Balkan frame and Thomas splint, is a great improvement over the old traction methods. So that nowadays the use of the two I have mentioned is as nearly standard as any we can attain.

In studying this subject for the last six years in connection with committee work of the American Surgical Association I collected over 2,000 cases of fracture of the femur. It was impossible to find more than 485 cases that could be traced by ultimate results, from which we got not only good reports, but actual observation of these cases in regard to the result of the various methods of treatment.

In the age period from one to fifteen years, operations were rarely found necessary and nonoperative methods were particularly useful and valuable. Ninety-five per cent of children from one to fifteen years recovered without any operation and had good functional results and, as a rule, very good anatomical results. In the tables the results were rated as anatomical and functional; good, moderate, and bad. A good anatomical result is taken to mean good bony union without distortion and unimpaired ability to use the member without pain. Of the 447 nonoperative cases, there were 180 good anatomical results, but of these 180 good anatomical results only 157, or 87%, proved to be good functional results, which shows that one may have good anatomical results, without good functional results. I dare say we have all noted this. Now of the moderate anatomical results, 10% of them proved good functional results afterwards, of the actually bad anatomical results 3% show good functional results. I am mentioning these facts to emphasize the point that though we must always, when it is possible, strive for good anatomical results, it does not necessarily follow that the resultant usefulness of the limb will be absolutely destroyed, or very greatly impaired, even if the best anatomical result is not obtained. I think in the courts and in discussion generally we should, as surgeons, all try to convey the idea that the thing we are striving for is good functional result. If a man is able to go back to his work and do the same sort of work he did before, he has a good result. A court examining for compensation should not simply consider the x-ray before it, demonstrating perhaps much callus, but rather the fact that the man can walk or wheel a wheelbarrow, and that he can do the work he did before.

The collected statistics show the surgeons of the United States and Canada without operative treatment of patients, restored to usefulness 62% of all cases of fractures of the femur they treated. Now how does that compare with operative cases? There were 136 operative cases in a total of 584. Of these operative cases the fractures involved the neck in 7 cases, fracture of the trochanter in 4 cases, 121 fractures of the shaft, and 4 of the condyles. The middle part of the shaft was the section most frequently operated. It is shown that though the anatomical result is rated good in 68% of the operated cases, as against 40% of the nonoperated cases, good functional results were obtained in 77% as compared with 87% of nonoperated cases. The nonoperative method gives better functional result than the operative methods. A further analysis shows that comparatively few cases in the age period from one to fifteen years were operated, the operative cases were chiefly adults. The cases were operated in nearly every instance, because nonoperative methods were not successful in obtaining reduction.

Only one death is recorded in the series of 136 cases. So that there need be little fear of death from operation. This death was from infection. The death rate in this series of cases is a little over 3%. That is a little too low. The actual death rate for operative cases from the operation is about 6%. We actually add 2% to the danger, in treating these cases by operative methods. I must say that I have formerly been very much inclined to operate on every case of fracture of the shaft of the femur when I could not obtain reduction by two honest trials under anesthesia by traction and manipulation. If after this the x-ray showed the bone was not reduced, I operated. I operated only in about 7% of the cases.

The period of disability was worked out separately for children and adults. We found that the average disability of the period between one to fifteen years was 4.5 months; whereas the average disability of adults in nonoperative methods was 8.2 months; with operative methods it was nine months before the man could return to the work he did before.

Dr. George P. Muller (Philadelphia): It is difficult to follow after Dr. Estes, because I suppose that during some part of every day for many years he has thought about these fractures of the femur. His work on the Committee on Fractures of the American Surgical Association is known to everyone.

Last spring Dr. Thomas told me that he was going to read this paper and would advocate open operation. I agreed to discuss it in order to support him in case of criticism because we both felt that the present feeling against the use of plates was unfair and based on false premises. The great majority of the cases of fractured femurs (shaft) seen in hospital practice occur among those who are not well-to-do and who must earn their living by manual labor, or at any rate are compelled to move around on foot. Such patients must obtain a perfect functional result, without limp and without deformity. If Buck's extension alone will reduce the deformity it should be used; if the Hodgson or Thomas splint is better with or without tong extension, this should be the method of choice; but we find that frequently it is not possible to reduce and hold the reduction by such means, and in these cases nothing is simpler, nothing more satisfactory than a steel plate properly applied. I'm absolutely certain that the presence of the metal does not interfere with the callus formation except immediately at the point of contact. I do not believe that the presence of the plate and screws leads to infection *per se*. I notice that a plate rarely comes loose if properly applied, i. e., if it lies flat on the fragments with neither end lifted so as to exert leverage. The percentage of infection in such operations is small in the hands of experienced surgeons. Finally, it should be remembered that the plate produces immobility at the break and hence callus formation will be less than in those fractures treated by other methods and with continued mobility.

Dr. John B. Lowman (Johnstown): The question of fracture, especially of fractured femurs, sways from one point to another. I recall several years ago being very enthusiastic about the operative and open treatment of fracture of the femur. A short time later they seemed to be condemning the procedure, and as Dr. Muller said, we all got a little bit careful. Then after an experience in the army I came home with the idea that I was going to treat fracture of the femur better by so-called standard splints. After almost three years' experience I have come to the conclusion that I am not getting the results from the so-called direct extension with ice tongs that I got with my open treatment of fractures. Therefore I am returning to open treatment of fractures. I do not believe there is any standardization for any fracture. I think we may have standard forms of splints to take care of a certain class of fractures, but as Dr. Muller said, every fracture requires individual treatment. I believe that later on, going over the percentages of treatment of fractures possibly for the last four or five years, you will find that the anatomical results will be the same with open treatment as with closed treatment if it is done properly. After all, in all fractures, the whole secret is the alinement and functional result, and if you are engaged in industrial work you want to give each man the best functional result that you possibly can, so that his earning power may equal others. You must study your cases to decide which will be the best method to do this.

Dr. Moses Behrend (Philadelphia): I was somewhat struck by Dr. Thomas' remark as to the setting of a fracture of a child's leg. If I understood correctly, he said that he tried to reduce that fracture without giving the child an anesthetic. I do not think Dr. Thomas treats setting of fracture in this way universally. It is not possible to set any fracture without an anesthetic unless the bones are already close together and in alinement. The best anesthetic unquestionably is ether, after ether chloroform, then nitrous oxid, but we do not get the relaxation we should get with nitrous oxid anesthesia. One very important point in Dr. Thomas' paper, and one on which he is to be congratulated, is the fact that in the past three years he has had no infection. We feel that we have reduced infection in the open operation for fracture to a minimum, but still once in a while we will have it. I distinctly remember operating on two children on the same day; we used exactly the same method. One of the children became infected, and for this reason has an imperfect result. The other had a perfect result. In the first case the femur is in a bad position and one I am absolutely ashamed of. However, it was not our fault, because the infection was the cause of this horrible result. I should like Dr. Thomas to give us his method of preventing infection and to tell us how he escaped it in the past year.

Dr. Charles E. Thomson (Scranton): I was astounded to hear the operative treatment for recent fractures boomed as it has been to-day. Twenty years ago I wrote an article that I have adhered to ever since in which I stated that no fractured femur is ever an operative case if it is a recent fracture. Why operate if you get such good results without? And now I have to take exception to my friend, Dr. Estes, in quitting after two trials. I do not think that is fair to the patient. I remember one case (a physician) in which I succeeded in obtaining a perfect anatomical reduction after the fifth trial, and I think it was safer then than operation. If I understood Dr. Thomas' paper aright, he lost a leg in one case and a life in another in a limited number of cases. That looks pretty serious to me and I do not think it should prevail.

The last speaker made a good point. If Dr. Thomas is trying to reduce his fractured femurs without an anesthetic, then I am not surprised that he has gone over to the operative treatment. Another point—I think you will all remember his pictures as thrown upon the screen, showing where he had trouble in reducing his fractured femur. I might say that in such cases, having failed on two occasions, I succeeded by transposing the ends, forcibly placing the lower fragment on the side opposite to the upper one, where I found it after the accident, and then by traction I succeeded in getting a good reduction.

I think the Thomas brace, at least in the hands of the civilian practitioner, is still on trial. I have never used it. We follow the very simple rule of reducing our fractures under an anesthetic and retaining them in a plaster cast.

Dr. Herbert B. Gibby (Wilkes-Barre): I was somewhat surprised to hear Dr. Thomas state that he has failed to get good union by vertical traction in patients under nine years of age. I have had considerable experience in these cases and so far have not failed to get good results. The method with which I have had success is the attaching of the injured limb *only* to the Balkan frame without any counterextension with weights. The limb is attached rigidly to the frame sufficiently high so that the hand can be placed under the buttocks on the injured side, without coming in contact with the bed. This procedure utilizes the weight of the body in counterextension.

In the operative treatment of old fractures I have found the autogenous inlay of very great value. If we have fibrous union with good apposition, it is not necessary to freshen the ends of the bone, but the inlay can be placed in position, bridging over the fibrous union, and in the majority of cases we get excellent results. By this method I have obtained firm union in a patient over fifty years of age who had been previously operated upon and had a resulting fibrous union in good position.

Dr. M. S. Henderson (Rochester, Minn.): I am very much interested in this subject and have enjoyed hearing the paper. I suppose everyone is guided by his own experience and must gradually develop his judgment by such experience. I cannot but feel that the dangers of infection and mortality rate are somewhat overestimated in open treatment of fractures. For instance, in a large series of fractures of the hip I have had one death from pulmonary embolism with nonoperative treatment and one following operative treatment. Unfortunately, all of us are not sufficiently skillful to reduce all fractures by the closed method. Briefly, our stand in the Mayo Clinic in the treatment of recent fractures is: We consider it very rarely necessary to operate on any fracture through the spongy bone, but do operate in many cases when the fracture is in the shaft of a long bone, such as the radius, ulna or femur. The metal plate, I believe, is more apt to lead to infection and therefore we prefer to use beef-bone plates. I find that we are performing open operations on our recent fractures with greater frequency than we ever have and we have no reason to regret it.

Dr. J. C. Biddle (Ashland): I should like to interrogate Dr. Thomas as to whether any laboratory examination was made in both the operative as well as the nonoperative cases?

Dr. Thomas (in closing): I will read first, in the way of discussion, something from Dr. Sherman, who is unable to appear. I find in his letter of regret something that might well be submitted here: "There is one thing reasonably certain, and that is, that the time is ripe for the adoption of a standardized treatment of fractures of the femur. This means, of course, that the standards should be elastic. There is no question that with the operative treatment of fractures, the mortality can be reduced to the same low rate as in operations for hernia, etc., and if wounds become infected, it is not due to steel plates and screws but due to uncleanliness on the part of the operator or his associates. There is nothing of an infectious nature about sterilized steel plates and screws. It has been demonstrated beyond any question that extra care and caution must be observed in these operations. Unfortunately, few surgeons will take these precautions, and as a result of their crude methods, infection is quite common. I suppose it will take twenty-five years before the surgeons of this country will recognize this fact. In the meantime, there will be a large contribution of cripples, with vicious deformities, etc., which never should have occurred."

I have read only a very short abstract of my paper and could not cover the whole ground in that short abstract. There were a good many things said that I should like to take up, but could catch only a few of them. As to good functional results: What are good functional results? There is a wide variation of opinion on that question. I told you of the little child with vertical extension. In answer to Dr. Gibby, I did not say I had any trouble with getting union by vertical traction. I got union in every child. Now what makes for function? If we are thinking only of the industrial patient and his desire to get back to work, good functional result will often come with considerable shortening. Here is something in my paper, not in the abstract which I read. Recently I had a compound fracture of the leg. Twelve years ago the patient had a fracture in the same region with about an inch shortening. I said to him, "Did that make any difference to you?" He said, "It did." "How?" "At the time I was a professional baseball player and I was a good hitter. After the time I fell and broke my leg I have never knocked out a home run and a two-bagger"—you know what I mean. He said, "I never was as good after. I did not stay long in professional baseball after that. I found myself, when I tried to bat, scraping up the ground to raise it in order to make up for the shortening of my leg." It made a big difference to him. He said there were many other ways in which he noticed it. The average industrial patient will not notice it. The newspapers reported recently that a fancy skater, because of an inch shortening following a fracture of the leg, had the other leg correspondingly shortened in order to preserve his skill as a skater.

Many of the operative cases, as Dr. Estes said, have been operated on for failure of nonoperative methods. None of mine were in that class, except one previously treated for eight weeks with Buck's extension. They were recent fractures. There is a great difference in the operative results in these two groups.

Dr. Behrend asked me what my technic was. I tried to cover that point briefly in my paper. I believe that direct fixation of the fragments with plate and screws and a good plaster cast is a very important thing in avoiding infection. I know of one case of compound fracture of the leg where the movement of these bones surely brought about suppuration, and I aim at getting as nearly absolute fixation as I can get. I applied a plaster cast from the chest to and including the foot in every case with that object in view. I get to the bone as quickly as I can and with as little trauma to the tissues as possible, pick the fragments up with forceps, angulate them, approximate accurately and straighten them out, put on the direct fixation apparatus, on plates or boards, and get out of the wound as quickly as I can with safety. I use practically no ligatures. I use hemostats when necessary but remove most of them without ligatures. I suture only the deep fascia and skin with continuous catgut and I always swab out the wound with dichloramin-T. Several years ago one of Dr. Edward Martin's assistants asked me to use dichloramin-T in a fracture operation. I did not like it or believe in it, but I finally tried it and I use it always now. I believe it is decidedly worth while as an additional factor when all other precautions are taken.

In regard to x-ray evidence of correction of deformity, you will find that those who talk about the perfect correction of their deformity by nonoperative reduction will not show you the x-rays taken before the attempt at correction and those taken afterward to prove the correction. They will tell you about it. Another point mentioned by Dr. Muller brought back to me a good deal of thought. He said something about the muscle action on the fragment during the after treatment. That has impressed me very much. I at first thought that if I fixed the fragments with plates and screws and cast and no infection followed I had nothing to worry over, that I would be bound to get union. That is not true. I got delayed union in a number of them under these almost perfect conditions. Strong union was later obtained in all except two, which promise well. I believe that in many of these cases, under the cast the muscles do pull on the fragments and loosen the screws if they have not taken good hold—and often they do not, and I think the loosening of the fragments is a very damaging thing. I wish to call attention again to Dr. Estes' statistics which showed a considerable mortality among patients with fracture of the femur who were not operated on.

A CASE OF PRIMARY CARCINOMA OF THE LUNG*

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The value of the isolated case report may be said to vary inversely with the incidence of the disease and directly with the extent of the observation. To separate the occasional lung neoplasm from the mass of pulmonary tuberculosis affords a service of immediate value to the individual affected. It may at the least avoid a waste of time and money in sanitarium treatment and it is to be hoped, prove an indication for surgical intervention.

When tumor masses of similar histology are found in different parts of the body, there comes with the assumption of a single original focus the responsibility of designation. Disregarding the perfectly obvious lymphatic extensions of epithelial tumors and the metastases of hypernephromata there seems to be no single standard of priority. In a rather limited access to literature we have found no pointed discussion of this important matter. It may be that individual peculiarities render impractical the adoption of any given standard or set of standards. Different lines of reasoning will apply in different parts of the body. Knowing that prodigious tumors may develop secondary to microscopic primary foci we may sometimes be able to establish no more than a strong probability as to the primary site.

With the hope of provoking a useful discussion, we venture the following suggestions for consideration in arriving at a diagnosis of primary tumor. The reasons may be grouped as clinical and postmortem. Clinically the consistent localization of subjective and objective symptoms must be given prominence, always bearing in mind the indirection of pain from nerve pressure. From the postmortem the size of the tumor nodules may help, taking the largest as having existed the longer time. This is manifestly not always reliable. Conditions surrounding the secondary tumor may permit more rapid extension than can be made by the original focus. In general, however, massive occupation of an organ by tumor speaks for primary growth as against metastases, which, scattered by blood or lymph, tend to develop in multiple foci. The massive tumor, assuming growth by continuity, will be the primary focus. Coalescence of metastatic nodules may present a similar appearance.

In paired organs the occupation of one only by tumor favors its choice as the primary site.

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The demonstrated tendencies of lymph and blood currents are to sow emboli in each. The type of cell which in some instances gives the most reliable information may not always be identified owing to degeneration or to lack of differentiation.

Primary carcinoma of the lung was thought to be very rare. Adler[1] in 1912 collected 374 cases. He suggested that a number of cases supposedly tubercular were in reality carcinomatous and he expressed the belief that the disease was less rare than was generally thought to be the case. That his surmise was true was demonstrated in 1916 by Scott and Forman,[2] who added 120 cases to the list, including four of their own. Of these four cases, three had been diagnosed as pulmonary tuberculosis. These authors state that Passler recorded 16 cases in 100 cases of carcinoma. Lavrinovitch[3] in 16,947 autopsies in one large hospital in Petrograd in 10 years found primary carcinoma of the lung 61 times, or 0.38%. Weller[4] reports 0.3% in 11,093 autopsies. Syle, Holmes and Wells[5] found 1% in 6,000 autopsies on mice. Edlavitch[6] quotes Frænkel as stating that of the tumors affecting the thoracic cavities, primary tumors of the lung are the most frequent, whereas those of the pleura are most infrequent; that of these tumors, carcinoma occurs four times as often as sarcoma.

Primary carcinoma of the lung is preëminently a disease of the fifth, sixth and seventh decades, although observed in all decades from the second to the ninth. Renaud[7] records a case of primary tumor in a man aged 21 years. Of the 374 cases reported by Adler,[1] 113 are recorded in the sixth decade. In 71.9% of the cases males are affected.

The majority of writers have not found gross trauma or inflammation produced by irritating inhalations of sufficient frequency to be regarded as more than coincidental. Ewing, quoting Wolf, states that tuberculosis is the chief etiological factor. Adler[1] in his more extended analysis of Wolf's work supplemented by consideration of other evidence both pro and con decides that the relationship is far from proved.

The early diagnosis of primary carcinoma of the lung is difficult because, as stated by Packard,[8] of its similarity to tuberculosis, unresolved pneumonia, pleurisy with effusion, pulmonary syphilis and thoracic aneurysm. Cotton, Cramer and Saloz[9] report that 80% of 29 cases in their collection escaped detection.

A very suggestive combination of signs, especially when found over an upper lobe, is increasing percussion dullness with diminishing audibility of the breath sounds. Cavitation with secondary infection may occur in carcinoma and produce fever, sweating and hemoptysis. This combination of signs and symptoms probably is the cause of many mistaken diagnoses. Under such circumstances, the absence of tubercle bacilli in repeated sputum examinations should raise the question of carcinoma. Adler[1] emphasizes the importance of cornage, a sound very similar to that heard when the trachea is partially obstructed.

A very important aid to diagnosis is the x-ray. MaMahon and Carman[10] state that in most instances the roentgen findings are pathognomonic of the disease, and may be the first to suggest the exact nature of the lesion. In the ten cases of Engelbach and Schnœbelen[11] the value of the rays was well demonstrated. Edlavitch[6] is of the opinion that an exploratory thoracotomy should have the same diagnostic value as an exploratory laparotomy.

The gross characteristics of lung carcinoma vary greatly. Infection, gangrene and hemorrhage contribute to a wide range of color and consistence. In Adler's[1] series, of those confined to one side 188 were right and 157 were left-sided tumors. Edlavitch[6] states that tumors affect the right lung three times as often as the left. Engelbach and Schnœbelen[11] in a roentgenographic study of a series of 10 cases found the right lung more often involved than the left.

The two principal forms are the nodular and the infiltrative, the latter being by far the more common. These tumors, starting as a rule from a bronchus, penetrate the bronchial wall and infiltrate the lung along the bronchial subdivisions as well as along the arterial, venous, lymphatic and even the nerve paths. Extending proximally these tumors form large masses at the root of the lung by involvement of bronchial, tracheal and mediastinal lymph nodes. The static effects of such involvement are bronchiectasis, atelectasis and gangrene. The nodular varieties show single or multiple nodules from one centimeter or less in diameter on up, and differ from the nodules of secondary tumor in occurring unilaterally. As the nodules increase in size, inflammation overtakes the intervening tissue. The nodules may coalesce and from lack of nutrition, liquifaction occurs, forming cavities.

Metastases from lung carcinoma are the rule and have reached nearly all the organs and tissues of the body. Dissemination is favored by the vascularity of the organ and the frequent invasion of the blood vessels. In Adler's[1] collection the bronchial lymph nodes lead with 117, the liver being a close second with 103, while 58 metastasized to the kidneys.

In size, as has been noted, the tumors may vary from a very small, scarcely gross, nodule to the complete transformation of the organ into carcinomatous tissue. The color is usually grey, yellow, pink or various combinations of these mottled on white. The appearance is opaque and the consistence is scirrhous or more commonly encephaloid.

The types of cells encountered in the lung carcinoma exhibit such diversity of appearance and arrangement that it is impossible to select any one type as characteristic. Even in the same tumor definite alveolar arrangement of cylindric epithelium has been found, together with portions in which the rapidity of growth has produced a structure indistinguishable from a rapidly growing sarcoma. Where keratinization has taken place and where intercellular bridges have formed there is no doubt, of course, as to the epithelial nature of the tumor. The cylindrical celled carcinoma of alveolar arrangement, originating as has been definitely shown from the mucous glands of the bronchi is frequently found and is considered by some as the typical if not the only form in which carcinoma occurs in the lungs. But even in these characteristically alveolar tumors of cylindrical epithelium there appear alveoli in which the cells are not cylindrical but pavement in character.

Three sources of the cells forming carcinomata of the lungs are commonly accepted, namely: bronchial mucous membrane, mucous glands of the bronchi and the alveolar epithelium. The tumors of alveolar origin are the most infrequent although some writers have considered all tumors with pavement epithelium as from this source. When tumors so derived do occur the cells are cylindrical and not pavement. This is in accordance with the fact that the respiratory epithelium of the embryo is cylindrical.

The tumors from the mucous glands of the bronchi produce the definite alveolar type with larger and smaller alveoli containing mucous and cellular detritus in varying quantities.

Tumors arising from the epithelium of the bronchi commonly project into the lumina and ramify along their branches. It is this type of tumor that furnishes the squamous cell pictures. Indeed, metaplasia of bronchial epithelium is observed in the complete absence of tumor formation, as in tuberculosis, and perhaps this change is the forerunner of tumor in many cases.[12] Finally, in the advanced growths it is usually quite impossible to say from what one of the three possible sources the tumor in question took origin.

The question of metaplasia with reference to lung tumors receives extensive discussion in Adler's[1] monograph in which he presents conflicting views of a number of investigators, some believing that true metaplasia does exist, not only in tumor and chronic inflammation, but also in acute processes, while others maintain that a foreign type of cell must either grow in by continuity or develop from embryonal remnants. Adler concludes that epithelium must be a highly plastic material designed to accommodate itself in manifold ways as local, physiological and pathological conditions require. His further conclusion is that the theory of persisting and abnormally dispersed germinal centers and remnants, while it cannot be disproved, is not necessary for the explanation of the so-called metaplastic transformation.

As in carcinoma elsewhere, very rapid growth produces an encephaloid mass, the cells of which are embryonal in nature and the stroma very scarce. This lack of differentiation may lead to an error in diagnosis if only one portion of the tumor is studied. Nearly all the tumors that have reached any considerable dimensions present portions degenerated and necrotic from circulatory disturbances.

CASE REPORT

White male, age 48 years, was admitted to the hospital June 15, 1920, complaining of cough, dyspnea and pain in the left side of the thorax of three months' duration. Because of our inability to speak the patient's language we were unable to obtain a detailed history. At the plant where he was employed we learned that he had never applied for relief, and as far as could be ascertained, had not been under the care of a physician. He expectorated a mucopurulent sputum which never became blood stained while under our observation.

On admission the temperature was 101.4°; the pulse and respiration were 108 and 44 respectively. The thorax was of the emphysematous type with a noticeable fullness of the interspaces of the lower half of the left side, in which region the respiratory movements were greatly restricted. Vocal fremitus was decreased anteriorly, and absent laterally and posteriorly. The percussion note anteriorly was dull; laterally and posteriorly it was flat. Anteriorly over the left side the breath sounds were exaggerated and dry râles were audible. Posteriorly over the lower half of the left side the breath sounds were almost inaudible. The right lung and the heart gave normal physical signs. While the patient was of sparse build, there was no evidence of emaciation and no cachexia.

On June 17th the blood Wassermann was negative. A blood count revealed 65% hemoglobin, 3,050,000 erythrocytes and 9,000 leucocytes, of which 80% were polymorphonuclears, 16% small lymphocytes, and 4% large lymphocytes. A blood count on July 9th and July 29th showed a loss of five points in hemoglobin and an increase of white cells to 11,200. Urinalyses revealed no abnormality. The sputum contained many pus cells, a few mononuclear leucocytes, a few large epithelial cells and bacteria. No tubercle bacilli were found.

A diagnosis of probable tumor involving the entire lower lobe of the left lung was made. An x-ray examination revealed a dense shadow which extended from the fourth rib to the diaphragm. Exploration with a needle at various sites over the flat area yielded no fluid. An exploratory thoracotomy revealed dense adhesions between the pleura and the chest wall and a very hard mass was felt in the lung.

The pulse rate varied from 85 to 100 per minute. Very shortly after admission the respiratory rate rose to 50 but subsided to 28 within twenty-four hours, and thereafter varied from 28 to 32 per minute.

On August 10, 1920, the patient insisted upon leaving the hospital. He applied for readmission on February 15, 1921, at which time he was very much weaker and stated that the thoracic pain was more severe. The cough was very much more troublesome. After February 18th vomiting occurred occasionally. Loss of weight was obvious. A blood examination on February 16th, revealed 75% hemoglobin, 3,550,000 erythrocytes and 15,400 leucocytes. There were 75% polynuclear cells, 22% lymphocytes. An x-ray examination now revealed a shadow occupying the entire lung. Urinalysis revealed no albumin, casts or blood.

On March 1st, the patient became mildly delirious at night, and, becoming steadily weaker, died March 7, 1921. The highest temperature between February 15th and the time of death was 99.4°; the lowest 97.8°. The pulse rate until just before death varied from 70 to 80, and the respiratory rate between 20 and 28.

A necropsy was made a few hours after death. Rigor mortis had not occurred. Inspection of the abdominal cavity showed that the liver was 8 cm. below the costal margin in the right midclavicular line. There was no free fluid.

The right pleural cavity was free from adhesions and fluid. The pericardial cavity was free from adhesions and showed about 30 mils of clear, straw-colored fluid. The left pleural cavity was obliterated by dense adhesions, so that the lung could be removed only by cutting through lung tissue.

The right lung was voluminous, smooth, light grey, mottled thickly with black. The apex was puckered by a few scars. Section showed a light grey to pink substance exuding freely a frothy fluid. No nodules or cavities were found.

The left lung showed exceeding density alternating with softening to the point of cavity formation. A cavity near the hilus contained 60 mils of white creamy fluid. Scattered throughout the substance were numbers of white, shot-like nodules with a marked tendency to become confluent, especially in a ramifying manner. About the hilus these nodules had fused in a dense white mass 2 cm. in diameter. In the upper lobe near the apex the tissue was soft, forming a potential cavity which became one in reality on slight manipulation. The color throughout was a rather uniform dark grey, mottled with larger areas of black and everywhere marked by isolated and ramifying masses of white. The odor was very foul.

The heart was of normal size. The muscle was firm, dark red, and the right ventricle distended and filled with a chicken fat clot. The valves were all intact. The aorta showed well advanced aortitis.

The liver was of normal size, its surface smooth and mottled darker and lighter red, corresponding to the central veins of lobules. The upper and anterior surface showed nodular elevations, one of which was 1.5 cm. in diameter, hard and white. Another was 6 cm. in diameter and of the same color as the surrounding liver, but of a darker shade. Section showed these nodules to be the superficial manifestation of masses of dense white tissue which were sharply outlined against the liver substance. There were six other imbedded nodules of the same color and consistence, varying from 0.5 to 1.5 cm. The gall bladder was thin walled and contained a thin dark brown fluid. There were no stones and the ducts were patent.

The pancreas was of the usual size and consistence. The color was yellowish pink. The spleen was normal in size. Its outer surface was dark grey. The cut surface was greyish pink and the consistence very friable, but uniform throughout.

The left kidney presented a nodular elevation along its outer border which, on section, was seen to correspond to a mass of dense white tissue occupying about one-sixth of the kidney substance without encroaching on the pelvis. The marking of the cortex and medulla were well preserved. The ratio of cortex to medulla was as two to three. The capsule stripped readily. There was a similar mass in the right kidney. The ureters, bladder and prostate gland were normal. The adrenal glands were of the usual size and markings.

The stomach and intestines were free from gross abnormality. The mesenteric and perihepatic lymph nodes were moderately enlarged and firm.

No connection could be determined between the tumor mass of the left lung and the ribs or vertebræ.

A microscopic study of a section through a medium sized bronchus showed most of it so devoid of staining reaction as to count for little but debris. The appearance of the tissue adjacent to the cartilage, both inside and outside was indistinguishable. Almost no semblance of the bronchial submucosa or mucosa remained. Its place was occupied at some points by tissue debris; at others by a band of new-formed connective tissue; at still others by nests of epithelial cells which varied in shape from flat spindle shaped cells to broad flat cells with large hyperchromatic nuclei. In some instances the intimate association of these with a definite layer of columnar epithelium situated nearest the cartilage, made them seem the descendants of the mucosal cells of the bronchus. Very large cells sometimes showing multiple nuclei were common, as were atypical mitoses. Occasional distended mucous glands were seen.

Another section from near the apex showed compressed lung tissue heavily infiltrated by black pigment and marked by occasional nests of large vesicular cells with deeply stained nuclei centrally placed. Such areas of compressed lung tissue alternated with heavy bands of dense connective tissue and other patches of pus cells in large part disintegrated. In still other parts the microscope showed reaction to have formed very dense connective tissue in which more or less compressed islands and cords of epithelial cells were seen. In no place was there any reaction characteristic of that of the tubercle bacillus. The predominant feature of the sections taken as a whole was one of degenerated cells.

One of the bronchial lymph nodes showed almost entire absence of lymphoid tissue. The general outline of the lymph sinuses was preserved as cords of epithlial cells, which are large vesicular cells, with hyperchromatic nuclei. The cords enclosed areas of degenerated cells which, from their size, might be taken to be a part of the tumor process.

Section through the liver showing a tumor nodule: The cords of liver cells adjacent to the tumor nodule were flattened and deformed, apparently from pressure of the foreign tissue. The cells further away were also shrunken and the sinuses filled with red blood cells. The liver cells were granular and their edges not clearly defined. The portal canals were the site of unusual infiltration by inflammatory cells and, in some, nests of foreign cells were seen which resembled those found in the larger tumor masses. Fat droplets were seen here and there but were not numerous. In selected areas yellowish brown pigmentation of the cells was abundant. The tumor tissue presented the same general characteristics seen in the lung sections, except there was much less lack of differentiation. Within the tumor nodule the process was continuous, except for broad and dense septa of connective tissue. Hyperchromatosis, multinucleation and abnormal mitoses were the rule.

Section through the kidney: Outside the tissue in the immediate neighborhood of the tumor nodule the kidney tissue was well preserved. Surrounding the tumor nodule the glomeruli and tubules were compressed and infiltrated by tumor cells which merged into a zone of inflammatory reaction occupied by scattered tumor cells. The nodule consisted of nests of tumor cells, as a rule approaching the formation of epithelial pearls. Many of them were very clear as to cytoplasm, the cell nests alternating with areas of degenerated tissue, the whole supported by a stroma of connective tissue in no place very dense.

The case presented seems to us clearly one of carcinoma primary in the left lung. From the clinical standpoint, the constant pulmonary character of the symptoms, to the exclusion of other visceral disturbance and the localization of the physical signs, point to the left lung as the point of origin. Postmortem inspection showed the tumor to occupy massively the left lung. The right lung was wholly free of macroscopic evidence of tumor. In the lung itself the close connection between tumor cells and the cells of the bronchial mucosa renders it highly probable that this tumor originated from bronchial mucous membrane.

In none of the lung sections studied was there any evidence of a reaction like that characteristically incited by the tubercle bacillus. This negative information discounts much of the gross appearance, which from tissue degeneration and cavitation, seemed to be due partly to tuberculosis.

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DISCUSSION

Dr. William Egbert Robertson (Philadelphia): Unfortunately a discussion of malignancy in the light of our present knowledge cannot yield definitely productive results. I say that advisedly because, of the various therapeutic measures employed, the only one that perhaps justifies the term is "surgical interference," and surgical interference of course is not constructive, but destructive. Yet it is the only thing that offers to us, and it is interesting to note that in this very field of primary carcinoma of the lung, two cases are existent in which operation has been practiced, one being the removal of an entire lobe. The patient was still living eighteen months after operation.

The merit of the excellent contribution of Dr. Dever and Dr. Royce lies perhaps in the fact that it calls attention to the frequency of the disease, that is, the relative frequency. In some 36,500 necropsies published from collective reports from various continental postmortem departments, there were 365 carcinoma cases, that is to say, primary carcinoma of the lung. So the condition is relatively frequent, for by this we see that of all carcinomas it constitutes about one per cent.

Something may be stated, briefly, about the terminology, in that we are perhaps too loose in the use of the term epithelioma and carcinoma. Many of these tumors essentially belong to the group known as acanthomata, really epidermoid cancers. They present the same etiology as skin cancer; that is they spring from stratified cells, or frequently present evidence of the stratified type, even if they originate in columnar cells. Prickle cells and hornification are very frequent findings.

Cases of primary carcinoma, when ultimately diagnosed, have often undergone such a degree of degeneration that the cellular structure is difficult of recognition. They may undergo structural changes and produce clinical phenomena similar to those produced by abscess or gangrene of the lung, and that is a point of some interest.

Another point is as to etiology. This was touched on by Dr. Dever in the reading of the paper. It seems we are still influenced by Roger Williams, Cohnheim and others who have so assiduously sought for precancerous phases of carcinoma. As a matter of fact, there are well recognized irritant or inflammatory lesions which may precede for a greater or less period of time, the actual development of malignancy. One of the most striking is x-ray dermatitis with its tissue necrosis, vascular occlusion, induration and fibrosis, and eventual proliferation of abnormal epithelial tissue. Again, leucoplakia may precede epithelioma of mouth or cervix, or the last named may follow a chronic endocervicitis. So too, hyperemia, endometritis, erosion of the endometrium, with or without myomata, may precede acanthomata or adenoacanthomata of the uterine cervix or body. Mastitis frequently precedes breast cancer, gallstones precede cancer of the gall bladder, and in like manner chronic inflammatory lesions of bronchi and lungs or tuberculosis of the lungs have been ascribed as the precursors of bronchial and pulmonary malignancy. Of very great interest in this connection however, is the information gathered from the cultivation of tissue in plasma outside the organism. It is well known that differentiated cells which undergo no further division, while remaining part of a complete organism, when separated and grown in plasma in vitro, begin to multiply in a form like the cells from which the differentiated cells originated. It seems most probable, therefore, that cells which have become differentiated and have assumed some special function in the organism, are normally inhibited by some means from continuing their primitive type. When this somatic influence is removed, as is the case when they are grown in plasma in vitro, they revert to their original types, producing more simple embryonic tissue.

In this case an effort has been made to ascribe to tuberculosis and the scars of tuberculosis the primary site of the carcinoma. This seems to me to be far fetched, for in my own limited postmortem experience —I have made over six hundred—forty per cent of my postmortems showed grossly, pulmonary tuberculosis, and thirty per cent more showed apical lesions of more or less typical tuberculous character. Now, if forty per cent of all persons coming to necropsy show frank tuberculous scars, certainly carcinoma of the lungs should be more frequent than it is, if tuberculosis is to be accepted as a precancerous phase.

Another point in connection with these tumors is the question of age incidence. Some cases have been reported very early in life, one within a few days of birth, which was therefore, doubtless, congenital; and this is rather strikingly an argument in favor of the view that these tumors may originate in embryonal rests, in undifferentiated cells.

Just another point in connection with these growths, and that is the diagnosis. I think the authors of the paper are to be highly commended in the fact that they made so early a diagnosis, and that they also early had an exploratory thoracotomy performed.

From the standpoint of diagnosis, there are two other tumors which will have to be considered in addition to those named by the readers of the paper: one, hypernephromas; and the other, endothelioma of the pleura. The latter are usually on the left side, while carcinoma of the lung is usually on the right side. Hypernephroma of the lung occurs equally on both sides. A man who had been a patient in the Episcopal Hospital, later entered a hospital for the tuberculous, and was there five months prior to his death. No tubercle bacilli were ever found in the sputum, although he had the classical signs of pulmonary tuberculosis. At the necropsy we found bilateral adrenal tumors with retroperitoneal transport and peribronchial lymph gland involvement at the root of the right lung, and rupture of this glandular mass into the adjacent bronchus, with complete solidification of the basal lobe of the right lung.

Dr. Eugene A. Case (Philadelphia): It is commonly believed that irritation and inflammation are very important factors in the production of carcinoma, as well as of other malignant tumors. It is interesting, in connection with this, to note the primary carcinoma of the lung is exceedingly unusual and yet the lung is a very common seat not only of infections but of irritations such as occur in chronic passive congestion, anthracosis, siderosis, etc. Fibrosis, sometimes extensive, and changes in the character of the epithelium lining the air passages are common. On the other hand secondary carcinoma is quite common, showing there is nothing inimical to the growth of carcinoma in the lung.

Dr. A. J. Bruecken (Pittsburgh): Recently we had an autopsy—a case of primary carcinoma of the lung, which caused death by fatal hemorrhage through ulceration into the pulmonary artery. There was a bulging mass at the Ludwig angle of the sternum which resembled gumma and bulging aneurysm. A suspicious colloidal gold reaction caused the clinical diagnosis of gumma of sternum to be made. Definite symptoms of brain tumor caused a diagnosis finally of sarcoma of sternum, but sections showed squamous celled cancer. At autopsy primary carcinoma of the right bronchus with rupture of the right branch of the pulmonary artery was found. No other portions of the lungs were involved. No direct continuity with the sternal mass was found. The diagnosis of primary carcinoma of lung, clinically, was entirely overlooked.

Dr. Judson Daland (Philadelphia): I desire to rise to congratulate the reader of the paper on his able exposition of a disease so rare that some of us never see it.

Dr. Dever (in closing): I simply want to reiterate that the etiology is unknown. We might as well be frank about it. As far as we were able to obtain the facts, irritation played no part in this case whatever. The occupation was that of laborer in a steel plant. He was inside, not exposed to any fumes or dust, no more than any one walking up or down a city street would be exposed to ordinary dust. Some authorities state that tuberculosis is an etiological factor. It seems to me from a standpoint of logic, that is absolutely untenable when we consider the great number of tubercular cases and the small number of primary carcinomata. The early diagnosis is difficult. I have probably never seen my opportunity to diagnose an early case of primary carcinoma of the lung. In this instance it was simply a matter of exclusion. I think a case seen late requires no strenuous diagnostic effort—only keep pulmonary carcinoma in mind. A careful search was made for any possible lesion elsewhere that could have been considered as the primary growth, but none could be found.

VITREOUS LOSS: ITS EFFECT ON THE END RESULT OF CATARACT EXTRACTION: ITS PREVENTION*

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The vitreous humor is a transparent, colorless, jelly-like mass inclosed in a delicate, equally clear, apparently structureless capsule called the hyaloid membrane. This latter is in close apposition to the back of the posterior lens capsule, and of the suspensory ligament of the lens, and also to the inner surface of the pars ciliaris retinæ, the retina proper, and the optic disk. The humor has a definite consistency in health, although containing 98% of water and having no demonstrable supporting structure. In certain situations, spaces are to be found, the most prominent of which is the canal known as the hyaloid canal, or canal of Cloquet, extending from the head of the optic nerve to the posterior pole of the lens and corresponding to the site of the fetal hyaloid artery. At the peripheral part of the vitreous may be found spaces running concentrically with the outer surface of the vitreous. Wandering cells are found at times in this humor. The vitreous is developed from the mesoderm, which in the embryonic period pushes its way through the choroidal fissure, growing into the interior of the eye between the lens and retina. The choroidal fissure again closes and isolates the vitreous from the surrounding mesoderm, which goes to form the uveal tract, the sclera, and the cornea. It must, therefore, share in the constitutional conditions affecting mesodermic structures in general, and to a great extent in those affecting other local and contiguous mesodermic structures.

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The vessels that develop from the closure of the cleft in the optic nerve portion of the choroidal fissure and extend into the vitreous (hyaloid artery) are of mesodermic origin. It is on this origin of the vitreous, that the prognosis of all vitreous conditions depends, although local infections are not to be excluded, since inflammation is essentially the reaction of the mesodermic structure to irritation.

The vitreous has an index of refraction of about 1.3340 and a specific gravity of 1.009, and the solid constituents are mostly mucin and allied substances. It maintains the shape of the eyeball, and supports the retina, which latter has definite attachments only at the optic disk posteriorly and at the pars ciliaris retinæ anteriorly. It is on this fact that the seriousness of loss of vitreous would seem to depend.

The vitreous depends for the proper performance of its function upon the maintenance of its consistency. All diseases of the vitreous produce the same end condition, namely, the lessening of its consistency. It would, therefore, appear that the solid elements, small in proportion though they are, must undergo absorption and be replaced by watery constituents.

Unquestionably the best manner of preventing the worst results that may follow loss of vitreous is by careful preliminary examination of the eye for the determination of the several conditions that induce disease of the vitreous. These are, in varying proportions, contraindicating factors in every cataract extraction. With a complete knowledge of their existence and an appreciation of their influence, an indifferent or poor result is not a great surprise—and any benefit obtained in such cases is regarded as a good outcome from a complicated condition.

While we desire to express the results of our own experiences in this contingency, we can with profit relate the observations of that past master of the craft, William Mackenzie, as noted in his book in 1854.

One of the points in technic given by this surgeon is especially worthy of reference: "When the incision is nearly completed, the operator cannot proceed too cautiously. If the aqueous humor has been entirely retained till now, the knife (Beer's) should be turned a little on its axis to allow it to escape. If this is neglected the pressure of the knife upon that fluid, acting on the lens is apt to burst the hyaloid membrane, particularly if it is weak, as it often is in old age, and this gives rise to ejection of the vitreous humor."

Mackenzie also advised, by way of prevention of vitreous loss, withdrawing the knife before the corneal incision was completed, allowing the eye to rest a minute, and then completing the incision with scissors or a probe-pointed knife. He contended that it is just at the completion of the incision, when the motion of the knife is nearly parallel to the laminæ of the cornea, the resistance to the instrument greatest, and the pressure on the eye most severe, that the hyaloid is apt to burst and the vitreous humor to be ejected.

Under the head of causes of loss of vitreous he makes the comforting observation that it is much more frequently the result of weakness of the hyaloid membrane from age or disease than from any other cause. The danger, he states, from this accident is not so much from the loss of vitreous directly as from the gaping state in which the wound of the cornea is left, the hyaloid membrane probably hanging through it, keeping it from uniting and causing the eye to inflame. "If only a fifth or even a fourth of the vitreous is lost, vision may not be materially affected. If a third is lost we cannot count on distinct vision. If more than a third, the pupil closes and the eyeball shrinks. Occasionally it happens, in consequence of the loss of even a moderate quantity of vitreous humor, that the pupil dilates and the eye, although previously sensible to light and shade, is found on recovery from the operation to be completely amaurotic."

Without regard to preëxisting conditions, loss of vitreous at the time of the operation may be attributed to a too fluid condition of the humor, or to the incision being made too near the periphery, thus depriving the zonule of its natural support, or to an incision being made too far down and consequently too large, or to the excessive pressure in the course of the expulsion of the lens. It is the criticism of the Smith operation that the incision is so broad and far down that it contributes to the loss of vitreous so common to this operation. On the other hand, T. Harrison Butler and Johnson Taylor agree that a large horizontal incision, comprising half the cornea is a preventive of loss of vitreous, its value being due to the fact that less pressure and counterpressure are necessary to express the lens.

In the case of fluid vitreous, while disastrous consequences may appear to follow the loss, most of them have already taken place, and the eye is adjusted to them in large part, and the vitreous has demonstrated its ability to renew its quantity if not quality. Consequently it cannot be regarded as entirely hopeless.

The loss of a portion of healthy vitreous is most unfortunate—in that increased intraocular pressure is its only cause, and detachment of the retina and hemorrhage may accompany it from the action of the same causes—as well as by reason of the loss of vitreous support. Its occurrence always indicates faulty technic in that particular case. But the principal bad result that follows loss of vitreous is destructive iridocyclitis, or rather destructive iridocyclitis is more likely to happen after loss of vitreous than in other cases without such loss. Butler has shown that panophthalmitis occurs in 4%, iridocyclitis in 16%, and detachment of the retina in less than 4% of cases in which there has been loss of vitreous.

Despite the alarm and mental anguish such an occurrence may produce on the part of the operator, it cannot be said that actual damage has been sustained until the usual period of convalescence has passed. There is no hard and fast rule to guide one in the prognosis. The worst cases, apparently, at the time of the operation, frequently turn out remarkably well. Nature renews the quantity, but the quality of the vitreous which has had its hyaloid membrane ruptured is never the same. T. Harrison Butler informs us that in the cases observed by him in which there was loss of vitreous, complete loss of vision followed in seventeen per cent of the cases. There must also have been other cases with varying grades of visual impairment. In most of his cases the impairment of vision was due to a permanent haze of the vitreous owing to the presence of large floating opacities. In other cases the pupil was drawn up, requiring iridotomy at a later date.

The frequency with which this complication occurs varies so that it is difficult to quote accurate statistics concerning it. T. Harrison Butler, of Birmingham, England, claims 6% as the frequency with which he has observed it in his personal experience. This appears to me to be rather high, as my own personal experience has not been over 1%, although it must be admitted that when cases presenting this complication appear, they appear in groups in such a way as to cause one to regard the incidence of this complication as very high. Butler emphasizes the importance of the general nervous condition of the patient as a factor, by his reference to the results of his work in Jerusalem, where he had three times as many cases of loss of vitreous as he had in England, due to lack of self-control on the part of the patients. This is admittedly a factor of great importance. He goes so far as to state that in nine cases out of ten the condition is due solely to straining on the part of the patient, a fact which every experienced operator readily subscribes too.

While there is a great deal to be said concerning the effect a poor technic will have upon the production of vitreous prolapse, there is no doubt that careful consideration of the physical condition of the patient is of great value. It is, therefore, necessary for us to prepare patients in such a way that mental repose is accomplished prior to the operation. An eye ward of the general hospital, with all the facilities of the latter and none of its annoying features, is of material assistance in this regard. Here the convalescent patients bolster up the courage of the timid and more or less frightened new patient and help to eliminate the unconscious desire to antagonize the surgeon. As an additional safeguard in suspected patients, frequently irrigating the eyes and the introduction of the eye speculum will be of great value. While the surgeon can readily detect nervousness on the part of the patient, it is amazing how the same patient will be able to appreciate any timidity on the part of the surgeon, a condition that occasionally arises.

T. Harrison Butler has found general anesthesia to be of value in patients whose general nervousness is not amenable to ordinary methods. He uses ether and does not think much of hypodermics of morphine, or nerve blocking with cocaine in these cases. While, in general, these views are shared by the author of this paper, in practice it has been found that careful preparation and the intensive use of cocaine locally have fulfilled every indication in my experience.

Loss of vitreous before the lens has been extracted nearly always causes the lens to be dislocated posteriorly. It apparently fills up the space left by the exuded vitreous. This complication requires removal of the luxated lens with a Taylor's or Critchett's spoon. The traumatism incident to this procedure influences the result of the cataract operation materially. Cases occasionally do well that are let alone after such a complication, the case then coming under the head of "Couching," one of the oldest cataract operations known.

The spring eye speculum, especially the type with the stop on it, is reputed to be a very common contributing factor to the production of vitreous loss. This view is not shared by Butler in his studies and observations. It is difficult to understand just how, except by its weight which is constant in all cases, it could effect the condition. It is the compression of the eye by the recti muscle that facilitates the expression of the vitreous. The pressure of the contracting orbicularis, if anything, retards it. Retractors are of doubtful value in the prevention of the condition. Extra hands are necessary and these are not always coördinating with the operator's. They enjoy considerable vogue, however, among experienced men and they must have some value or such men would not use them to the exclusion of the eye speculum.

My method is, as follows: As soon as I have completed the incision, performed the iridectomy and lacerated the lens capsule, I remove the speculum and use the thumb of my left hand on the upper eyelid, and the little finger of the right on the lower eyelid to press out the cataract. By this means, I feel sure, my percentage of vitreous loss is low.

Butler, whom we have quoted so frequently, performs a preliminary iridectomy with a view of acquainting the patient with the operation and its requirements, and the surgeon with the patient's shortcomings. This must have some value, although I seldom have recourse to this double operation precedure.

Loss of vitreous having occurred, our indication is to remove all the contributing factors that are still operative—all that we can—and save as much vitreous as possible, excise that which remains outside the incision and close the eye. If the prolapse follows immediately after the section, the lens must be hastily removed or the operation immediately abandoned. The spoon is used in these cases but if the amount of vitreous lost is very great it is best to abstain from further efforts at extraction and close the eye. If the prolapse follows extraction, many good surgeons close the eye without making any attempt at a perfect toilet. Butler, for instance, does not excise any of the prolapse but merely bandages the eyes for forty-eight hours. While it frequently happens that in such a case at the end of this time the vitreous will have receded and there will be no iris in the wound, it is best to leave the wound edges as clear as possible before closing the eye. There is no doubt that while keeping the eyes closed for at least forty-eight hours is desirable, it can be done with greater peace of mind if it be known in advance that the wound edges are clear and clean. Premature opening of the dressing may result in a repetition of accident and attendant retinal detachment. The employment of a conjunctival flap—a sliding flap—has been recommended as a preventive in suspected cases, but it must be remembered that the union of the wound is not always prompt in such cases.

If the eye has suffered no other complication than the loss of moderate amount of vitreous the prognosis is likely to be good, but unfortunately the manner of determining it is "post" or "pro." When the case is completed we can best tell the result, but as a rule the skillful and careful operator need not be unduly alarmed at the loss of a reasonable amount of vitreous. Such an operator will never lose a great amount of it, and it is the loss of a *great* amount that has a uniformly bad prognosis. Why? Because it is also attended by other effects of bungling and unnecessary traumatism to the eye. Occasionally I have used normal salt solution, diluted one-half, in marked cases with gratifying results. The indented cornea assumes its usual symmetry when the lost vitreous is replaced with the diluted salt solution applied with my special hydrostatic eye douche.

In conclusion I would emphasize once more that the factors of greatest importance in the production of loss of vitreous are: first, the original condition of the eye; second, the general nervous condition of the patient; and third, and perhaps the greatest, the lack of proper dexterity on the part of the surgeon in the particular case. A surgeon may be all that could be desired but if he fails to be gentle and rapid in one of these cases that show the slightest predisposition to lose vitreous, he is certain to have such an accident occur.

DISCUSSION

Prof. J. Van der Hoeve (Leiden, Holland): I am very glad to have the opportunity to be the first one to compliment Dr. Fox on the way in which he presented to us this subject of vitreous loss. We know that even in the hands of so skillful an operator as Dr. Fox, vitreous loss is met with now and then in extraction, and we are convinced that the average eye surgeon always has a certain amount of vitreous loss in this operation. Still, vitreous loss in the extraction of cataract is always comparatively rare, but there are other operations in which it is much more frequent.

I refer to extraction of dislocated lenses, of secondary cataract, etc.

Dr. Fox alluded to the operation of Smith and said there is more vitreous loss in this operation than in others. I believe that, theoretically, Barraquer's operation is the best, because in this operation no pressure is exerted, only suction. According to my conviction this operation ought to be done with complete iridectomy. Barraquer, however, makes only a small peripheral iridectomy before the extraction. When we operate in that way, I fear that, notwithstanding the dilatation of the pupil, the circumference of the lens will be larger than the pupil, so that we will have to turn the lens. This causes pressure on the vitreous and can lead to vitreous loss.

An inconvenience of all intracapsular operations is that the corneal flap must be large. This can be dangerous when the flap does not come down in its right position, but overturns.

I saw Barraquer doing his operation in Vienna, and it struck me that the patient had to lie flat on his back with his head down, which is not agreeable, and may be dangerous in a hyperemic patient. The first extraction I saw succeeded excellently. In the second the patient was not very quiet, so that instead of a peripheral iridectomy a complete iridectomy was done and the extraction also succeeded well. In the third one, however, there was an immense loss of vitreous. Profesor Fuchs told me that in Barcelona he saw a great number of cataract extractions done by Barraquer without a single vitreous loss. In my clinic the first extraction with the Barraquer apparatus succeeded with a complete iridectomy.

All in all, I believe that the intracapsular extractions give splendid results where the operation is done without complications; but it seems to me that in the hands of the average operator the danger of vitreous loss is too great.

As to the damage done by vitreous loss, we all know that vitreous loss, even in large amount, may occur without any damage to the eye either directly after the operation or years and years later, and I do not believe that we can give a proven figure of vitreous loss which must damage the eye. On the other hand, vitreous loss, even in the slightest amount, may cause all the damage which Dr. Fox has told us about—bad wound healing, infection, etc., and even sympathetic ophthalmia. Consequently we must not look upon vitreous loss as some ophthalmologists do, as a mere trifle, but as a serious accident which we should be anxious to prevent.

I will not try to summarize all the things which can cause vitreous loss, but only fix your attention on one thing which beginners always forget and which contributes very much to the loss of vitreous: pressure on the eyeball with the fixation forceps. The operators think so much about the real operation that they forget the forceps. Therefore, I always advise laying the forceps aside as soon as the incision is made. As a rule the patient holds his eye steady enough to complete the extraction.

In every case in which I expect a great chance for vitreous loss, as in complicated cataracts, extraction of dislocated lens, secondary cataract, etc., I use four sutures. At the ends of the vertical and horizontal meridian I put the sutures (with Kalt's needles) into the sclera as close as possible to the cornea, so that they have a firm grip in the sclera without perforating this membrane. Two assistants take the sutures, one in each hand, and as soon as the vitreous tries to come in the wound the assistants drag at the sutures in a radial direction, consequently the capacity of the eyeball increases, a negative pressure arises and the vitreous is sucked back into the eyeball. Sometimes you can see the vitreous protrude and go back as often as you increase or slacken the pull at the sutures.

In this way we prevent the vitreous loss or make it minimal in dangerous cases. The drawback of this procedure is that we need two assistants for it, but the profit is large enough to counterbalance this.

Dr. William Campbell Posey (Philadelphia): As Dr. Fox has accentuated, the points to be brought out are the following:

Is a little loss of vitreous, after all, of serious moment; and even though healing be prompt after such accidents and the immediate vision good, need we fear that later on, just on account of the vitreous loss, vision will deteriorate?

Like Dr. Fox, I am willing to subscribe to the dictum of the great Mackenzie, and, with him, have found that if only a fifth or even a fourth of the vitreous is lost, vision may not be materially affected, whereas if a third is lost we cannot count on clear vision. The loss of a greater proportion means ultimate phthisis bulbi. In some cases, however, even slight loss of vitreous has proven fatal to the integrity of the eye. These are cases for the most part in which the eye has been diseased prior to the operation and the vitreous more or less fluid, or where there has been some other complication like incarceration of the iris, etc., to interfere with healing.

The chief things to be considered in the prevention of vitreous loss are (1) the employment of safe methods of extraction, and (2) experience, with the development of a high degree of skill in their performance. With both of these conditions operating, there will be but little loss even in previously diseased eyes, and scarcely any at all in the removal of uncomplicated senile cataracts. My own experience has been that in my first hundred or so of cases, vitreous loss was appalling. Of later years it has been surprisingly slight.

We have all of us so recently had the opportunity of observing Colonel Smith's remarkable work that we know that even in his hands the Indian operation predisposes to vitreous loss. How could it be otherwise? Arnold Knapp, on the other hand, in his report of a second hundred successive extractions of cataract in the capsule after preliminary subluxation with the capsule forceps, recorded vitreous prolapse in but nine cases. It occurred at the end of the operation and was very small in amount. Notwithstanding this accident, the vision obtained in seven cases was 20/30 or better, and 20/60 in two cases.

My own experience has taught me that if one would avoid vitreous loss in cataract operation several things are essential:

1. The choice of a good speculum. I prefer the Murdock or Mellinger speculum. Its branches remain parallel in all stages of separation and the tighter the lids grip the holders the more rigid the branches, and no degree of gripping can interfere with the instant closure of the blepharostat.

2. After the incision has been completed, it is most unwise to insist that the patient look down too far, This will prevent gaping of the wound and too much tension on the inferior rectus muscle.

3. A very gentle hand in the manipulation of the cystotome or capsule forceps.

4. The avoidance of undue persistence in the removal of cortical matter. Better trust to needling later on.

5. A perfect knife and other instrumentarium.

6. Tranquility and confidence in both surgeon and patient.

Dr. Edward A. Weisser (Pittsburgh): I should like to say a word with reference to Dr. Fox's remarks on the preparation of the patient—about warning the patient, the introduction of the speculum, etc. It has been my fortune to have operated a number of insane patients. In these cases I have taken the patient to the operating room before the day set for the operation, introduced the speculum, cocained the eyeball, flushed the eye, etc., telling the patient that I was performing a preliminary operation. I did this several times in some cases, with the result that the operations were as successful as if the patients had been sane and able to take care of themselves properly during the operation.

Dr. Edward B. Heckel (Pittsburgh): The loss of vitreous is always a serious complication for a number of reasons, as has been stated. I think one of the keynotes in the prevention of this loss, however, is the preparation of the patient. If you have things quiet and the patient informed beforehand just about what is to be expected of him in the various stages, he will go through all right in most instances. It is also well to caution him that some things which may seem to him to be red tape are very essential and based on the best experience. It is a good thing, too, as Dr. Weisser has said, to put the patient through some of the steps of the operation beforehand. Then you know some individuals when they attempt to open their eyes will open the jaw, and the eyeball rolls out and is put in a cramped position. These patients should be put through some movements and warned what they may expect.

Another very important point about cataract operation is the incision. There is no operation in the whole realm of surgery that has received so much study as the cataract operation, and there is no operation in the whole realm of surgery that has only one incision to make and only one chance to make it. One of the very essential things for that is a sharp knife. It must be absolutely sharp, and the smoother the dissection is made the better it is for the eye and the more rapid the healing process; also the less trauma inflicted on the eye the more rapid the healing process.

The matter of expulsion of the lens has been dwelt upon, but after all, as Dr. Posey says, it depends upon the individuality of the operator whether he does a combined extraction, a simple extraction, or what not. Having trained himself along one particular line the chances are that he becomes proficient in that, and I think he ought to stick to it. The essential things are to get the confidence of your patient, have sharp instruments, and, as has been pointed out, have a speculum that will not cause more pain. A very important point, I think, is to caution the patient beforehand that when passing the speculum he must thoroughly relax, with both eyes wide open, so there will be no pressure produced on the speculum. It is my practice always to cover the opposite eye with sterile gauze so the patient can remain relaxed and quiet, and yet see nothing.

Dr. Robert Scott Lamb (Washington, D. C.): I have not had as much experience as some of these gentlemen who have been speaking to you, but I have probably had a good deal more than the average ophthalmologist has a chance to get. I did the combined operation for a long time. I did the Smith operation for two and a half years, and then I devised one that suits me. Whether it would suit anybody else I do not know. I wrote about it several years ago, publishing it in the *Ophthalmologic Record*, and it has been to me a solution of some of these difficulties. I use the Murdoch speculum. I have not decided whether Greene of San Francisco has a better instrument or not. I am inclined to think not in some ways, because the lid retractors are too broad. But his idea was to take the Murdoch speculum and have the assistant raise the lids away from the eyeball.

I make the incision about the upper half of the cornea, well within the cornea, until I get up to the sphero-corneal margin above, when I go through and come out, and the flap, unlike the usual flap, is a bridge. I now extend that bridge above the sclera 10 m. m., as a rule. I found the knife I used was too long pointed and got in the way, but I extend the conjunctival incision and then undermine it with saissons, thus making a bridge. That acts exactly as guy ropes on a tent—it pulls the cornea back in place again every time. As soon as you release it, it is back in place. You can do your iridectomy underneath it, pushing aside the bridge above, grasping the iris and keeping the sclera underneath the bridge.

I agree absolutely that just as soon as I have made my incision I no longer use forceps, except possibly a small iris forceps to catch the iris, or catch the bridge and lift it away. Then with very gentle counterpressure below I try to tilt the lens forward. I go in there above with a wire loop and lift the lens and extract it. I do not recommend that to every operator by any means, but for those men who have done a good many operations and are skillful in the manipulation of their instruments it is no particular trouble to go in there and get out with no loss of vitreous. That is especially true if you have made a large enough corneal incision. If the corneal incision is small, you will find the lens larger than you had expected; you then have to resort to capsulotomy before extraction and the vitreous substance may be lost.

The point Dr. Heckel made is good. I have operated on a good many negroes, and in working with them I always say, "Keep your mouth open." Many of them have bad teeth and it is not always a pleasant experience to have them breathing in your face, but if they hold the mouth open they cannot close the eyes. That is one of the many points we learn by experience.

Dr. Fox (in closing): At times it is almost impossible for the patient to resist the spasm that closes the eyelids and thus causes escape of vitreous. The "nerve block" procedure I carry out is to inject a one per cent solution of novocain into the upper and lower eyelids about one hour before the operation. This anesthesia produces a semi-paralysis of the orbicularis muscle, the eyelids remaining partially open.

As regards the removal of a luxated lens in the anterior chamber, an incision is made directly through the center of the cornea and the speculum is removed. Pressure is then made through the upper and lower eyelids, with the thumb of the left hand and the little finger of the right forcing the lens into the gaping incision, and the assistant with the aid of a small hook deftly draws the lens forward and out of the gaping wound. Professor Van der Hoeve's substitute is commendable and is worthy of trial.

The diluted normal salt solution is, in my experience, the best substitute for a depleted eyeball.

THE BASAL METABOLIC RATE IN CONSTITUTIONALLY INFERIOR CHILDREN*†

A PRELIMINARY REPORT

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During the past decade the relation of basal metabolic rates to various clinical conditions has received considerable attention. The work of Benedict and his group along the line of perfecting the methods and of establishing standards, of DuBois, in early clinical investigations and establishing a simpler procedure for determining the surface area, and of Means and Boothby in their investigations in thyroid conditions have done much to place this procedure in our hospital clinic. Basal metabolism affords a valuable aid in diagnosis and treatment of disease. Boothby has advocated the classification of diseases according to whether they showed an increased, normal or decreased basal metabolic rate, this classification resting, therefore, on the alteration of a fundamental factor, namely, heat production. At present, cases may be grouped on this basis, the mild cases showing up to 25% increase, the moderately severe 50%, and the severe 75% and upwards. The subnormal cases show a decrease from 10 to 40% below normal. The normals vary from minus 10% to plus 10%. Improvement in clinical conditions is shown by the approach toward normal rate. Variations from these normals have been pointed out in apparently normal individuals but in clinical procedure the unaccountable alterations in established normals are very infrequent. Especially in children from 10 to 18 years of age there is surprising agreement to the standards now in use.

The routine use of basal metabolism in the clinic of to-day has been adopted only for thyroid cases which, in association with clinical findings, permit the classification referred to. Hyperthyroidism is considered as the clinical syndrome resulting from an excess of thyroxin in the body. Thyroxin has been identified by Kendall as the active principle of the thyroid gland. Hypothyroidism is considered as the opposite of hyperthyroidism. This distinction is made on a quantitative rather than a qualitative basis. The relationship of thyroxin to heat production can account for all the phenomena in hyperthyroidism as due to a sustained elevation of basal metabolism. We, therefore, can make use of the basal metabolic determination in differentiating those conditions due to variation in the activity of the thyroid gland from those due to nervous and other conditions in which the clinical resemblance is marked.

The symptoms of thyroid involvement have been extremely unreliable as a guide to toxicity and since thyroid functional alteration has been assigned empirically as a prominent factor in etiologic relationship to these conditions, we have carried out these observations. In many of the preparations recommended indiscriminately for backward children, thyroid substances have been the active ingredient. In the series presented, an endocrinopathy was suspected as a significant factor in the symptom complex of the constitutionally inferior.

The cases which we have selected presented manifestations of physical or mental variation, or both. They have been chosen to point out the value of basal observations as a guide both to diagnosis and to control of therapy, and fall into three groups, namely: group I, normal basal metabolism; group II, increased basal rate; and group III, decreased basal rate.

In the first group we have selected two cases with normal rates but presenting indefinite symptoms pointing to hypothyroidism. One case (E. F.) was a young girl, aged 14 years; obese, weighing 186 pounds, with irregular and scanty menstruation; showing emotional instability and mental retardation. The basal metabolism was normal. Thyroid extract was given, producing marked irritability and nervousness. The obesity in this case strongly suggested an endocrine basis but with a normal rate, and the reaction to thyroid therapy serves to call attention to the pernicious habit of this procedure as a general measure for obesity. As Means points out, it relieves one evil by creating another. The reaction in this case shows how easily one can produce the hyperactive symptoms in an individual with a normal rate. It is well to point out here that the hypopituitary as well as hypothyroid conditions show a decreased rate.

D. M., the second case in group one, is a young male aged 13½ years, well formed physically but unable to make proper progress in school. He shows mental retardation, nervous instability and past history of convulsive attacks from ages of three to six years. Basal metabolism was normal. This patient under thyroid therapy had shown a marked aggravation of his symptoms.

These cases in group I serve to show the reaction attendant upon the administration of thyroid extract to patients with normal basal metabolism. Although many of the symptoms are indefinite and many point to apparent hypoactivity of the thyroid gland the reaction obtained tends to confirm the basal observations as the more reliable.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

†From the Department of Metabolism, Mercy Hospital, Pittsburgh.

Group II shows an increased metabolic rate. One case (J. R.), aged 13¾ years, shows tremor, over-active physical make-up, mental retardation with skeletal overgrowth and presence of supernumerary toes on each foot. Basal metabolism increased.

The third subdivision which we present consists of those cases showing a decreased metabolic rate. E. F., female, aged 18 years, showed the classical signs of cretinism in childhood. Has had thyroid therapy since five years of age. First examination six months ago showed her to be sluggish mentally and physically. Basal rate 16% decrease. Thyroid therapy begun. One month later basal rate normal and patient improved. Two months from first examination patient was extremely sluggish mentally and physically and the basal rate was 18% decrease. The thyroid dosage was doubled and the basal rate of August 1 and September 1, 1921, was normal, with very noticeable mental and physical improvement. This case serves to illustrate the value of these observations as a guide to therapy in a quantitative manner.

The second case in this group (S. C.) was aged 8 years, showing attacks of petit mal since three years of age, mental instability, adiposity with supraclavicular deposits of fat and chloride retention. The basal rate was 15% decrease and under thyroid therapy favorable progress has been noted.

While not belonging to this group, we wish to report on results in adolescent goitres. The observations have shown normal basal rates and in three very marked enlargements small doses of iodine have been given with frequent observations on the rates. The clinical results have been satisfactory and the cases are checked frequently, with basal rates as a guide to therapy.

The children observed were from eight to eighteen years of age. The observations were made with the Benedict closed circuit apparatus. No difficulties were encountered with children failing to coöperate. The determinations were made in the Metabolic Department of the Mercy Hospital, the cases coming in from outside, resting one-half hour on the couch, and triplicate observations being obtained. We have not attempted to carry out these observations in many children under ten years of age, thus limiting our series.

We have realized that the determination of normal standards at the ages in this series might be open to question. Each of the cases presented has shown a definite point in regard to the value of the procedure and we have been convinced that it is the most reliable method, in conjunction with the clinical findings and the results of therapy. The utilization of this method would tend to prevent "the giving of thyroid when in doubt," which tendency was emphatically pointed out by one of us. It would also serve to regulate the dosage.

Conclusions: Basal metabolism affords a means of classification of the cases and serves as a guide to therapy.

DISCUSSION

Dr. Edward L. Bauer (Philadelphia): Dr. Pollock said that there is still room for a great deal more work in metabolism in endocrinology. Indeed that is true; the surface has hardly been scratched, and I might say that this is also true of the work we have had an opportunity to do in Philadelphia along this same line. I hope that this subject will be developed more rapidly than at present.

Dr. Pollock's work in regard to basal metabolism substantiates ours very well, and not only in the hypothyroid but also in the hypopituitary cases. Dr. Strecher, of this city, with whom I am not, however, associated, has found that he is up against a stone wall in regard to sugar tolerance. I am rather in the same predicament, and I should like to know if Dr. Pollock has done any work with the blood sugar and sugar tolerance and gotten anywhere with it.

Dr. Pollock (in closing): Our results with glucose tolerance tests in adults have not yielded satisfactory results, so that we have not attempted to make use of it in this work as a part of our routine.

The observations reported here were carried out primarily on the assumption that without a significant alteration in basal rate we could consider that the thyroid was an unimportant factor in the disturbance.

As an aid in therapeusis I believe our series, although not large, is suggestive as a warning against the indiscriminate use of thyroid therapy in the constitutionally inferior child.

THE CHILD'S RIGHT TO HEALTH*

EDWIN ATLEE GLENN, M.D.

BERWICK

One in every five deaths at all ages occurring in this country is that of a child in its first year of life. One in every three deaths at all ages is that of a child under five years. Every tenth child born in this country dies in its first year. The United States ranks eleventh among the countries of the world in the matter of infant mortality.

These figures are a challenge to the medical profession, because most of these deaths come from preventable causes. But we physicians, alone, cannot prevent them. It appears rather that we are already trying to do too much by ourselves and not enough through others by means of our greatest weapon, which is *publicity.*

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

In the matter of infant mortality this is especially important. The child itself is helpless. It has no knowledge of hygienic laws; it has no judgment to choose the beneficial, or refrain from the harmful things. Therefore, it has the inherent right that these things shall be done for it; that it shall be protected from harm and guided in right directions.

In the first place, the child has the right to be well born, free from syphilitic taint in the blood or gonorrheal infection in the eyes. It has the right to a fair start in life. Furthermore, it has the right to be well raised, to be properly fed, clothed and cared for.

But the medical profession alone cannot do this. We cannot see that all children are fed and clothed and cared for properly. We can, however, instruct their parents in these matters, and it is only by doing so that we can make progress. We may inform ourselves of all the new discoveries in medicine, and yet progress in the reduction of the child mortality rate will not keep step with the education of the physician. It will keep step, rather, with the education of the public. The public must be informed that most illnesses and deaths of children come from preventable causes. It must be informed how and why and wherefore. It is not enough that this education of the public be carried on case by case in the course of our practice. The time to do the most effective work in the preservation of child life is when the children are well; not after they become sick.

Every child born in Pennsylvania should be an object of public interest. The welfare of that child should be a matter of public solicitude. Our birth registration should mean more to us than merely a compilation of figures. It should point out to us definite places where actual service can be rendered. The parents of every newborn child should, in my opinion, receive from some authoritative source systematic instruction in the raising of that child; how it should be fed, clothed, bathed, exercised, rested and guarded from infection and accident.

This instruction can be carried on in various ways. By means of prenatal clinics, public health nurses, health centers, baby welfare stations, public lectures by physicians; but perhaps most effectively of all by pamphlets or leaflets sent to the parents at frequent intervals, carrying the information needed at each stage of the baby's development. The parents are really hungering for this information and it should be supplied to them officially. It is time that ignorance, superstition, granny notions and quack advertisements were relieved of the privilege of setting the standard of child hygiene and that authentic medical facts were spread broadcast until they reach every nook and cranny of our state. Health facts should be pounded into the people until there is no excuse for anyone not to know, no excuse for parents to allow their children to fall sick and die from gross ignorance. These facts should be supplied to the public even if it is necessary to print them in every language from Assyrian to Yiddish.

This instruction, furthermore, should be carried on until the child enters school, so that the public will be disposed to coöperate with the agencies existing there for children's welfare. Medical inspection of the schools has brought wonderful results in the matter of the detection of defects among the school children, but there is a great field for some form of follow-up work that will insure the correction of these defects. Coercion seems impracticable; and anyway, as a general proposition, coercion in health matters is an undesirable procedure.

Nutritional classes, health leagues and kindred movements offer some help here, but it would seem that we must revert to our original argument that the intensive hygiene education of the public is, after all, the great problem at hand. When once the people realize the menace of these defects they will themselves demand that they be corrected.

Is it not time, then, that we lay aside some of our professional reticence and stand out publicly, persistently and patiently, with a definite educational program in disseminating the established facts about the causes and prevention of children's diseases? Is it not time that we live up to our full capacity; that we realize that we should be not only practitioners of medicine but also preachers and teachers of health?

DISCUSSION

Dr. Samuel McC. Hamill (Philadelphia): In the opening sentence of Dr. Glenn's very interesting talk, he has made it clear to all of us that the child is in need of help. The figures he quotes he wisely offers as a challenge to the medical profession, because most of the conditions which give rise to the appalling mortality of early life are preventable. There is a sad lack of interest amongst the members of the medical profession in the prevention of disease. Indeed, there has been a peculiar opposition to advances along this line. The only conceivable reason for this attitude would seem to be the fear that the prevention of disease would lessen the opportunities of the physician. If this be the case it is a very false conception.

If we took the proper interest in educating the public to the importance of preventing disease and if we were adequately equipped to give the right kind of advice to this end, our contacts with the people who ordinarily employ us would be just as frequent and more satisfying to us, and of eminently greater benefit to humanity. It has been my privilege to be tied up with medical social work for a great many years, and the opportunity has been given me to study the effect of preventive measures upon the work of the physicians. I have seen intensive preventive work develop in a community which in its beginning met with the united opposition of the physicians of the community. Ultimately those engaged in that work were appealed to by the physicians to assist them, because the workers coöperated with the physicians and did everything in their power to persuade the slightly ill to seek medical advice. The work of the physicians increased rather than decreased. In the final analysis, therefore, they were naturally eager to and did coöperate splendidly. The same result would obtain wherever similar work might develop.

One very serious manifestation of the delay on the part of the medical profession in interesting itself in and coöperating with the social groups in the development of this work, has been that the social workers have reached the stage in which they feel that they cannot secure the coöperation of the medical profession. They have, therefore, proceeded to carry on, without medical advice, measures which can only be wisely and safely directed by medical men. This tendency is growing rapidly. Social workers and nurses are rapidly taking over work which the profession should either be doing or directing. All over the state of Pennsylvania at the present time, there are groups of lay people who are employing poorly trained social workers and nurses to carry on what they call nutrition work. This work is being done without one particle of medical advice or supervision. The medical profession has considered these very disturbances of nutrition, which these untrained groups are treating, among the most subtle of their problems. The disturbing feature is that in a certain percentage of cases which these groups handle, they get results, because the addition of milk to the diet of many of them is sufficient for a gain in weight. In a large percentage of their cases, in which the cause of the under-nutrition is more obscure, they fail to benefit. Soon, that group, which is by far the most important, is thrown into the discard and neglected, until the lowered resistance caused by their under-nutrition culminates in the onset of some infection. The child then falls into the hands of the physician at a time when he too is more or less helpless.

Our attitude towards those who are doing this sort of work should not be one of criticism. Rather the criticism should be directed against ourselves. Our lack of interest in these vital problems has driven these lay groups to seek help and advice from the unqualified, because they have been unable to get it from those who should be able and willing to advise them.

Dr. Glenn has well said, that while we cannot ourselves do many of the things which the properly trained nurse or social worker is doing, we can at least advise our patients intelligently along these lines, and train them to understand that the prevention is of much more importance than the cure of disease. Unfortunately it so commonly happens that when disease has finally arrived, there is no help. It seems to me that as physicians we have failed lamentably in recognizing our responsibility to the families that we treat and especially to the communities in which we dwell, in that we have held aloof from these helpful, progressive procedures and permitted them to fall into the hands of those who are not qualified to develop them.

Dr. Glenn asked two very important questions in closing his talk, namely: "Is it not time, then, that we lay aside some of our professional reticence and stand out publicly, persistently and patiently, with a definite educational program in disseminating the established facts about the causes and prevention of children's diseases? Is it not time that we live up to our full capacity; that we realize that we should be not only practitioners of medicine, but also preachers and teachers of health?"

There is only one answer to these questions. The time for such action on the part of the medical profession is long since overdue. The reform that must come about should have its beginning in our medical schools. Social medicine requires special knowledge and it should be the function of every medical school to have the social aspects of medicine wisely and effectively taught, so that when men go out to practice their profession they will be equipped to guide wisely the medical social work of the communities in which they live, and advise wisely the families in which they practice. Some medical schools have already established such courses, and the others should follow.

In closing, permit me to commend Dr. Glenn for having chosen such an appropriate theme and having handled it so admirably.

Dr. Lida Stewart Cogill (Philadelphia): I wonder, Mr. Chairman, if I might say one word in reference to the mother who has to care for the home, or if that will be out of the line of discussion. We have heard about the education of the mother for the proper care of the child, e. g., how to feed and care for it, and we know that education of the mother along these lines plays a very important part. But I should like to say one word for the mother. She has numerous duties to perform in the home. Unless the baby has her best care, it does not stand the same chance of living past that first year. Unless the mother has someone to consider her welfare, she is not going to be so able to nurse the baby. If she becomes over-fatigued, we know the milk supply will fail. I claim to be an obstetrician, and therefore, am interested in the mother and the young child. I feel that we should have more oversight of the mother following delivery. We have educated the people to the importance of prenatal care. That is doing a great deal for both mother and child, but it does not go far enough. After the baby is brought into the world, there should be someone interested in the mother during those first six or eight weeks to see that she has rest, to see that the complications which might follow delivery are recognized and overcome, to see that she is brought back into proper health, so that she will be able to take her proper place in the home. Therefore, I want to make a plea for more postnatal care for the mother as well as for the child.

Dr. O Pine queries:—Why is it that the reporter from Berks County has a full report in almost every number of the Journal, and most of the other reporters have not?

SELECTIONS

HARELIP AND CLEFT PALATE

STEWART L. McCURDY, M.D.[†]
PITTSBURGH

The most frequent congenital deformities of the face and mouth are cleft alveolar process, harelip and cleft palate. Without regard for other methods or other opinions as to method of operating, it is my opinion that these defects, where all of the above named tissues are involved, should be operated upon in the following order: *first,* the cleft in the alveolar process should be closed, regardless of whether it is unilateral or bilateral; *second,* the harelip should be closed, regardless of whether it is partial, complete, or on one or both sides; *third,* the cleft palate should be closed, regardless of whether it is of the soft palate alone or a complete cleft extending to the alveolar process. The above does not include irregular forms of defect of the face, such as coloboma, or lateral cleft extending from the mouth to the orbit, or median cleft of the mandibular region, etc.

The age at which patients with harelip and cleft palate should be operated for these congenital defects is to be determined by the operator himself. I prefer to do the lip and alveolar cases within a few months after birth, and have done harelip operations twenty-four hours after birth. The best time is after the mother has recovered from her accouchement and the child is thriving, which will be from two to four months after the birth of the child. Operations may be done at any age during life, with an equal degree of uniformity in results.

Operation for Cleft of the Alveolar Process: Cleft of the alveolar process may occur with harelip and without cleft palate, but it rarely occurs alone. Whether there is or is not a cleft of the palate, the operation is pretty much the same. As a rule, the free margins of the process stand from one-half to more than an inch apart, and it is very essential to approximate these ends. The operation consists in severing the alveolar process on its labial surface from the free margin into the anterior naris on the good side, about half way through the bone, in unilateral cases. In young children this can be done with a scalpel, since the bones are rather soft; in older children or adults, after severing the soft tissues with a knife, the bone is cut almost through with a chisel. After the process is thus severed it can be broken off by pressing directly against the free end of the process. It should be sufficiently free to permit complete approximation of the ends across the cleft. The margins of the cleft are now freshened by the use of a scalpel, care being taken to remove a strip of mucous membrane well up into the naris. In young children a cervix needle may be used to perforate the process on the two sides. Here also silkworm gut may be used instead of wire to hold the process in position. The knot should be tied on

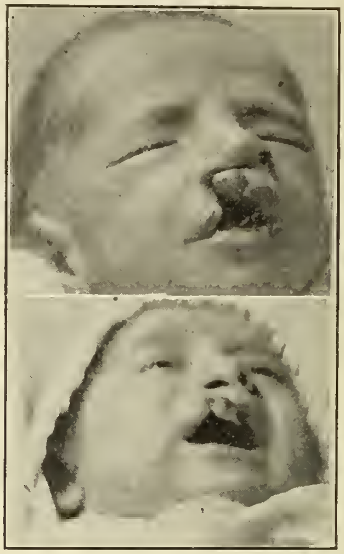
Fig. 1.—Two cases of unilateral complete harelip and cleft alveolar process, without cleft palate. The first step toward closure is to adjust the displaced alveolar process, as described in the text. When the free end of the process does not return to a normal alveolar line, it may be necessary to remove a triangular section back of the process. The process is held in position, as described in the text. The lip is closed as may be selected by the operator.

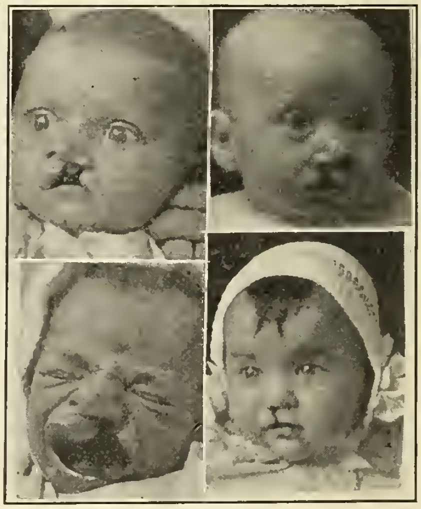
Fig. 2.—This group represents average cases of unilateral complete harelip, all having cleft palate, except the child with the bonnet on.

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the lingual side of the process so it can be removed without lifting the lip from its position as it rests against the labial surface of the process.

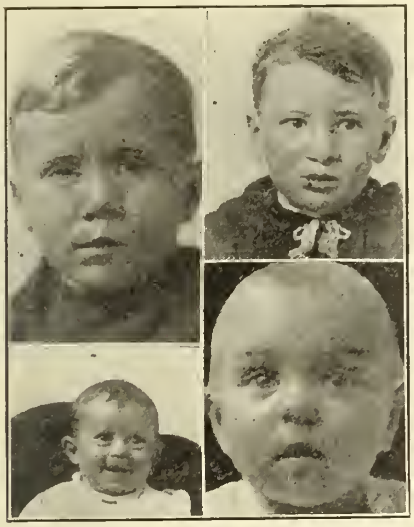

Fig. 3.—This group represents usual results obtained in the average case.

In case of bilateral cleft alveolar process, where the premaxillary bone extends well forward and is frequently attached to the tip of the nose, it is sometimes necessary to take a V-shaped section from the septum so as to permit approximation of the process. In these cases silkworm gut sutures introduced with a cervix needle may also be used in young children; in older children a drill will be necessary to perforate the process. No. 22 iron wire is the material most frequently used and here also the wire should be twisted on the lingual side of the process.

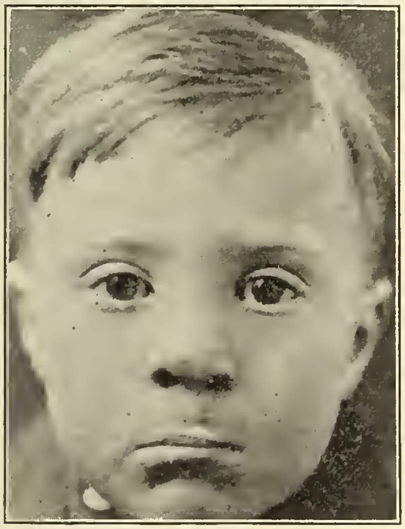

Fig. 4.—The Mirault operation in my hands furnishes the most uniformly satisfactory results in complete unilateral harelip, as this case demonstrates.

Operation for Harelip: The second step in the operation in this form of defect is to close the harelip. It must be remembered that the clinical varieties of harelip are partial unilateral, partial bilateral, complete unilateral (into the naris), complete bilateral (into the nares), and partial on one side and complete on the other, the latter being a rather rare form. In the incomplete unilateral form Nelaton's method is to be preferred. It consists in making a horizontal incision parallel with and half an inch from the vermilion border, the incision being made entirely through the lip, and from a half to three-fourths of an inch long. If traction is now made upon the highest point in the notch and the lip drawn directly downward, the V-shaped horizontal slit becomes a vertical line and is thus closed with sutures.

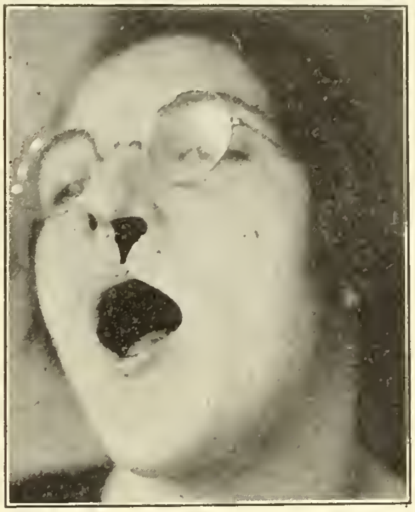

Fig. 5.—A girl, aged 20, who had had a harelip operation when a child. The cleft of the palate was complete. Operation as described in the text was done, and union throughout was one hundred per cent. The left anterior naris, as may be observed, was four times as wide as the right. The dark area extending down into the lip was made with ink and indicates the amount of tissue removed. This operation not only made the nares the same size, but the lip buckled down and filled in a very deforming notch. Many of such defects may be corrected.

In unilateral harelip, i. e., where the defect extends into the naris, the Mirault operation is to be preferred, and is the method which is universally used. It consists in freshening the cleft on one side throughout, and on the other side of making an incision from the margin of the lip outward, which makes a flap. The upper portion of the lip is freshened on the opposite side. By approximating these freshened margins, the flap slips over and below the lip on the side first freshened. These are held in position with sutures.

The cases illustrated in this article, as will be observed, were done in this way. In freshening the edge of a harelip it is best to use a very sharp-cutting pair of scissors and cut entirely through the lip directly through the vermilion border. The method of closing the wound is of great importance. It is best to have four or five cutting edge needles threaded with silkworm gut and in needle holders ready before any operating is done upon the lip. If the operator stands on the right side of the patient, it is best to cut the left margin of the lip first. After the edge has been freshened, an assistant grasps the lip near the angle of the mouth between the index finger and thumb of his left hand to control hemorrhage. The operator now freshens the lip on the right side of the patient with a pair of scissors, at the same time controlling the hemorrhage with his left hand, the thumb being on the inside of the lip. The needles, being ready, are rapidly thrust through the margins of the lip, beginning at the naris. In a child, usually from three to four sutures are necessary. They are passed entirely through the lip, each suture being clamped until they have all been introduced. These sutures may now be tied, beginning above. If, in introducing the needles, the lip does not approximate in the desired position, they may be removed and others introduced. With practice, however, it is rarely found necessary to change any of these sutures. Finally, a very fine suture with a very small needle is introduced through the margin of the lip, so as to approximate the extreme tip of the flap.

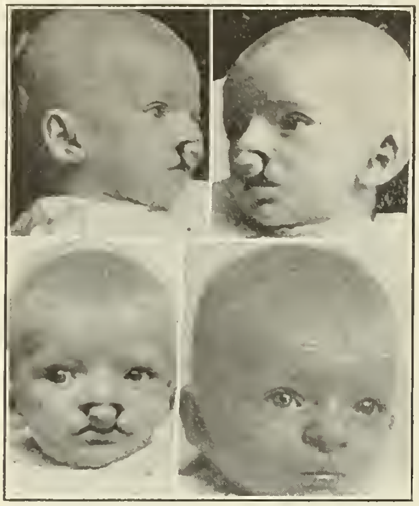

Fig. 6.—The above case was one of bilateral harelip, cleft of the alveolar process and complete cleft palate, with marked advancement of the premaxillary bone, and with the skin destined to be the upper lip attached to the tip of the nose. The first step in the operation is to dissect the skin from the premaxillary bone and allow it to hang to the tip of the nose. The second step is to force this bone into its normal position, where it is secured, either with silkworm gut in the infant, or with wire in older children. The third step includes freshening the lip margins and closing with silkworm gut. The fourth step is to make the lower edge of the septum by trimming the lateral margins of the skin still attached to the tip of the nose; freshen the free end and suture it into the upper edge of the lip.

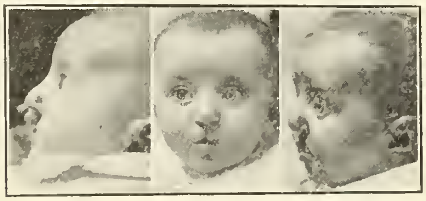

Fig. 7.—Similar to preceding case.

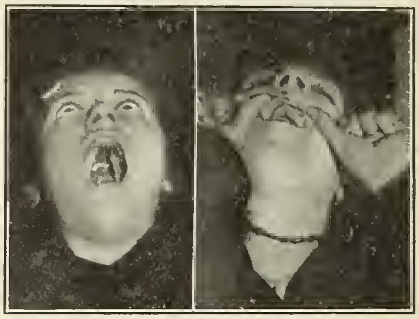

Fig. 8.—Cleft palate without other defects. The palate completely united after the first closure.

In doing the operation as above described, it is not necessary to use a hemostat to control hemorrhage from the cut margins. The use of hemostats or ligatures destroys the circulation and lacerates and contuses the otherwise keenly cut tissue, and no doubt may account for a great many of the failures that occur in these cases.

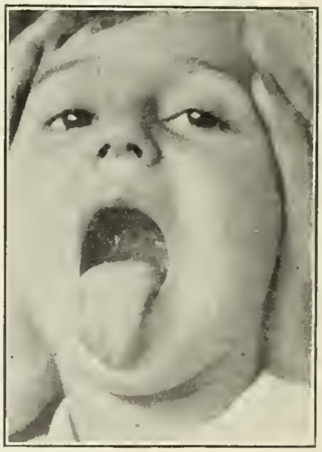

Fig. 9.—Cleft of the soft palate with union throughout. There was no harelip.

Dressings are never used and have not been for a number of years, principally for the reason that saprophytic infection occurs underneath adhesive plaster or gauze or collodion. This also may account for a number of failures. The stitches may be removed from the tenth to twelfth day. Usually about ten minutes is required to do this operation.

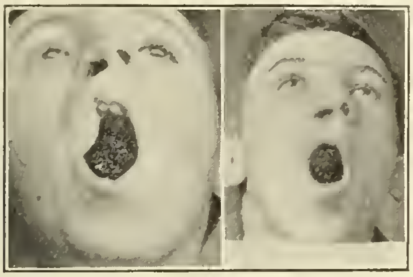

Fig. 10.—Two cases with harelip and complete cleft palate. The final result was most satisfactory, with good lips and closed palates.

Some surgeons think it necessary to cut the lips and even the cheek loose from the external surface of the maxilla, but this is indeed an *inexcusable mutilation,* increasing hemorrhage and shock, and endangering the life of the patient. There is always an abundance of skin; in fact, the cheeks are so adaptable that the margins may be overlapped half an inch or more without undue tension.

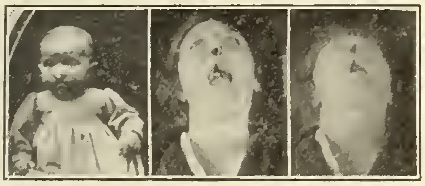

Fig. 11.—This case furnishes one of the tragedies of ignorance. There is never too much tissue and there is always enough material; it is only misplaced. I saw two cases last year in which the premaxillary bone had been amputated in childhood, the operator evidently not knowing what to do with it. In this case the palate was closed after two operations, but the slit in the alveolus remains open and about half an inch wide.

Operation for Cleft Palate: Operation for cleft palate is a more complex proposition than that for harelip; and while it may be done at any age, the proper time is before the child begins to talk, if the "cleft palate twang" is to be avoided, which, when once acquired, may be overcome only by a diligent process of reëducation. It is easier to operate on a case for the first time than on one where previous unsuccessful attempts have been made. Valuable material has usually been used up, which results in irregular cicatrices less viable than the original histological tissue. Hence, promiscuous experimentation by those who have not been specially trained should be avoided for the good of the patient. Material once used may never be restored.

To the beginner operation for cleft palate is probably the most disappointing of all attempts in surgery. It may look easy, but it is not, and many failures follow, and it may require years before uniform success is obtained. Most surgeons who attempt these operations abandon them, usually on account of not having a sufficient number of cases to keep the technique constantly in mind.

Operation for cleft palate in adults is as uniformly successful as in younger children. In two months seven cases were operated, with ages as follows: twenty-seven years, twenty years, eleven years, eight years, five years, four years, and eighteen months. The results were one hundred per cent in four cases; about ninety per cent in two cases, and sixty per cent in the case of the eighteen months' old child, the cause of failure being constant crying. These results are exceptionally good; indeed, better than at any time during the past. This improvement is due to the mastering of technique in this most difficult operation in all surgery. Every step must be accurate and conclusive. There is generally enough material, but it is misplaced, and it is the operator's duty to return these tissues to

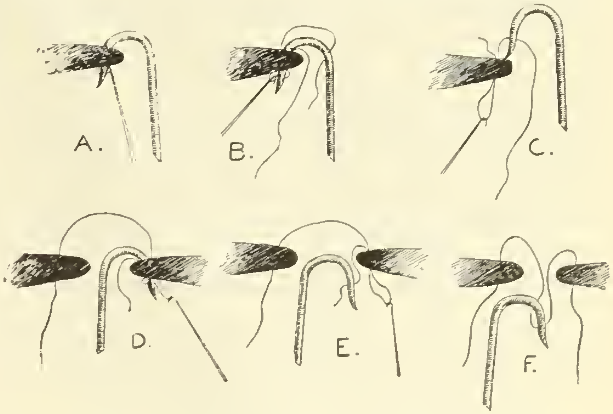

Fig. 12.—Author's Method of Introducing Sutures.

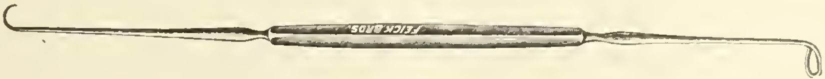

Fig. 13.—Hook and Eye.

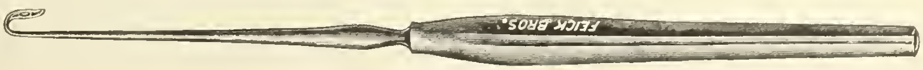

Fig. 14.—Original Curved Needle.

their normal position and condition; and when this is done, union may be expected.

In the technique in operations for bilateral complete cleft palate, the mucoperiosteal tissues are separated from the hard palate by the use of a Fillebrown periosteal elevator. In wide palates the primary incision along the margin of the palate should be made as high up as possible along the nasal floor. The entire flap should now be separated freely from the hard palate back to its posterior margin, and if necessary up to the gingival line throughout. The palatal body is now separated at the posterior margin of the bone by either an incision or by a process of gradual elevation with an instrument made for the purpose. The entire tissues thus separated from the hard palate must be brought practically parallel with the gingival line in order that the flap may be approximated without tension. The margin of the soft palate to the tip of the uvula is now freshened. If the margin of the flaps is irregular or ragged at any point, this should be corrected by the use of a sharp scalpel. The tissues are approximated and sutured. Small needles are no doubt the best, since they do less damage to the tissues. The best material for sutures is silkworm gut, as it is heavier and more firm and less likely to cut through the flap, and the sutures are more readily removed later.

Figure 12 shows the method which I have been using for a number of years, which has been adopted by a number of operators, and which is probably as satisfactory as any other method. The hook and eye and the needle illustrated in Figures 13 and 14 are essential to the completion of this method of closure.

DANGERS OF ELECTRIC MOTORS WITHIN METABOLISM APPARATUS

FRANK B. SANBORN, M.S.
Formerly Professor in Tufts College

There are two objections to placing an electric motor within a closed circuit metabolism apparatus: Increase of temperature that is certain to occur and may be serious, and the dangers of explosion.

Experiences with closed circuit metabolism apparatus during the past four years, have shown conclusively that both of the above objections are well founded. Papers have been published that refer to increases in temperature, but none that I have read have pointed out the dangers from explosion. Increases of temperature are bound to occur when an electric motor runs inside a closed circuit. Such increase may vary from 2 to 3 degrees during a test, up to 10 or 20 degrees, depending upon the speed of the motor and the smoothness of its operation on the particular day that the test is made. A motor may run for weeks, causing only an increase of temperature of a few degrees, then suddenly begin to spark and generate. With constant care and scrupulous attention dangers of operation can be kept at a minimum, but excess heat cannot be entirely eliminated.

An increase in temperature causes variations in results of the test. If the change occurs gradually from the beginning to the end of the test, the mean temperature would represent a fair average, but if increase has occurred only in the latter part of the test, the mean temperature will not be the true average for the test. Estimated and empirical values are given for correcting temperature changes in the Benedict original paper published in the *Boston Medical and Surgical Journal,* May, 1918.

A change of temperature of 2 degrees Centigrade may be disregarded in ordinary testing, but a change of 6 or 8 degrees. as frequently happens, introduces an important correction which must not be overlooked and yet which by our present methods can only be included in the results as approximate. Therefore, I have found that it simplifies determinations to have increases of temperature of only 1 or 2 degrees and furthermore the results with such increases are more accurate than when 6 to 8 degree changes occur.

Besides the question of increase of temperature which deserves serious consideration, I have a record of 9 explosions that have occurred in metabolism apparatus when the motor-driven blower was located within the closed circuit. I assumed that one reason why these explosions have not been previously reported is because doctors and technicians who have published articles have not regarded such explosions as of serious importance. In most cases there has only been a puff and an out-blowing of smoke, but in one case where oil was being used in the water jacket and a highly trained technician was making the test a fire followed the explosion. A technician in another large hospital found that when the explosion occurred in her instrument she had but an instant before taken her face from the apparatus and thus she escaped serious injury. As far as I am aware no serious injury has resulted in any case. The first explosion occurred while the original tests were being made at the Springfield Training School, and these tests formed the basis for Dr. Benedict's original paper. The seriousness of these explosions was pointed out to me by a leading expert on metabolism tests, who put to me this question: When an explosion occurs, who is the responsible party? Or we may ask: Is the technician who operates the apparatus responsible, the physician who authorizes the test, the hospital where it is made, or the manufacturer who furnishes the apparatus? It is evident that legal questions might develop a situation which a persistent lawyer could make very disagreeable.

It has been found practicable to construct the apparatus with an electric motor that produces the circulating current located outside the closed circuit. Also, in recent developments, reports of which are soon to be published, it has been found that the closed circuit may be made efficient without the use of any motor and blower. This development, which makes electric current unnecessary, causes the apparatus to be more generally useful and reduces the hazards of operation to a minimum which cannot be entirely eliminated when an electric motor is used within the breathing circuit. And is it advisable to use any means of testing within a hospital or sick chamber which may cause even a slight explosion when other means which eliminate explosions are easily available?

Boston, Mass.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

POLYCYTHEMIA

DR. S. K. FENOLLOSA

Polycythemia was first described by Vaquez in 1892, but little was known about it until Osler wrote extensively on this subject in 1903.

Polycythemia is a disease of unknown origin, characterized by a persistent increase in the number of red blood corpuscles, due to excessive erythroblastic activity of the bone marrow, by the ruddy appearance of the patient, and by an enlarged spleen in the majority of cases.

The patient commonly seeks medical advice on account of: (1) an abnormal color of the skin and mucous membranes; (2) symptoms of cerebral congestion, such as headache, vertigo, poor memory, irritability or depression; (3) weakness and dyspnea.

Pain in the legs is a common symptom, sometimes appearing as violent muscular cramps. Pain in the splenic region is sometimes complained of, and there usually is marked constipation. *Hemorrhages* are common from nose, gums, stomach, bowel, bladder, into brain or as purpura of the skin. The *skin,* especially of the face and hands, is a reddish-blue color rather than that of a true cyanosis; the tongue and buccal mucous membrane are deeply congested, and there may be hemorrhagic oozing from the gums. *Edema* of the legs may be present. The *spleen* is enlarged in about 85% of the cases, but varies much in size; the enlargement may precede the increase in the red cells.

The *blood* is essentially pathological. The hemoglobin is higher than normal, ranging from 100 to 150%, even 220%, depending on the method used for estimating it. The red blood cells are usually between 7,000,000 and 10,000,000, while 15,500,000 has been recorded. The white corpuscles are commonly increased to 15,000—even to 30,000, while occasionally they are normal in number. The polynuclears are increased to 80% or more and eosinophiles are commonly increased to 9%. The viscosity of the blood is much increased. There is no evidence of increased fragility of the red corpuscles.

The *course* of the disease is chronic, lasting for years, with remissions and exacerbations, but it is eventually fatal. There probably is one anerythremic phase in which medullary reaction is compensated by the hyperactivity of the spleen, destroying the corpuscles. Later comes the crisis of plethora with increase of the red blood corpuscles, cyanosis, vertigo, headache, neuralgia, and hemorrhages.

Pathology: The bone marrow retains its fatal red appearance in nearly all bones; and it shows hyperplasia of all cells of both the erythrocytic and leucocytic series. There is great vascular engorgement of the other organs, which may lead to hemorrhages of the stomach, bowel and bladder, or to minute thromboses in the nervous system.

TREATMENT

Splenectomy has been reported in one case with improvement. The use of radium and x-ray has given benefit in some cases, none in others. Benzol has been used, with striking benefit in one case. X-ray following the use of benzol has given marked improvement and apparent return of the blood to normal.

Mayo summarizes his views on the effect of the spleen on the blood as follows: It acts on the blood in a threefold manner.

> 1. It destroys deteriorated red blood cells. In hemolytic jaundice in which there is a "work hypertrophy" of the spleen, splenectomy gives brilliant results. In pernicious anemia, the R. B. C. are born feeble; the spleen sacrifices these R. B. C., which are the best the patient can produce, and so splenectomy gives good results. In splenic anemia, the R. B. C. are unnecessarily destroyed by an overaction of this function of the spleen. Here, too, splenectomy gives good results.
>
> 2. The spleen exhibits a strainer action by which microörganisms are removed from the blood stream, and sent to the liver for destruction. If not functioning properly as a strainer, splenomegalia develops, for example, in typhoid, chronic syphilis, malaria, and tuberculosis.
>
> 3. Probably the spleen also originates hormones, which act through the blood stream on organs at a distance, especially on the bone marrow.

Polycythemia, then, may be the result of splenic hormones in the blood acting on the bone marrow, which in turn then produces red blood corpuscles in excess. Dr. W. J. Mayo has removed the spleen in one case of polycythemia with extraordinary improvement, and he thinks that the spleen plays a greater part in polycythemia than has been believed in the past.

REPORT OF CASE

During the eight years a patient was under observation, sixty-five blood examinations were made; the hemoglobin ranging from 110% to 57% just before death, averaging about 95%, which was distinctly above normal for the Dare instrument used. The red blood corpuscles ranged from 9,580,000 to 3,500,000 just before death, averaging between 8,000,000 and 9,000,000, with a persistent fall to below 6,000,000 for a period of five months, after severe hemorrhages.

The leucocytes were nearly always increased in numbers, usually from 15,000 to 26,000, with occasional drops to normal. The differential counts showed a high polynuclear percentage—.73 to .87—and a marked eosinophilia.

SOME POINTS IN ABDOMINAL DIAGNOSIS

DR. H. H. DONALDSON

No careful internist would be excused were he to omit the routine physical examination of the chest by inspection, palpation, percussion and auscultation. We believe it is worth while to use similar methods in examination of the abdomen. Every one makes use of inspection as a method of abdominal diagnosis, but there are many points to be observed that are not seen by a casual examination.

In acute abdominal disease a study of the respiration is important. Variations from the normal of both the costal and abdominal breathing should be carefully observed. Abdominal pain in the presence of pleurisy can thus usually be identified as to its cause. Fixation of the abdominal muscles is a common observation—not only a general fixation but at times a localized fixation. This rigidity, therefore, can be determined by both inspection and palpation. Acute appendicitis will occasionally show a fullness of the superficial circumflex iliac and the superficial epigastric veins. The retracted fixed abdomen is diagnostic of early acute peritonitis and surgical treatment in this stage offers a good prognosis, but when the retraction is progressive the prognosis is bad even with the best surgical treatment. Inspection is a valuable method of examination in suspected cases of intestinal obstruction. In addition to local or general distension it is often possible to see the peristaltic waves, even in fleshy subjects.

A case was seen recently in which a diagnosis of obstruction was made, chiefly on this one sign. There was chronic constipation with occasional slight pain. Fluroscopic examination was negative. There was no distension and no palpable mass. One examination of the stool for blood was negative. Observation of the abdomen for a period of about twenty minutes was finally rewarded. A fullness first appeared in the left iliac region, followed immediately by a peristaltic wave extending upward and following across the transverse colon. Pain was experienced at this time but it was not severe. Proctoscopic examination was negative. Operation demonstrated a carcinoma of the sigmoid. The direction of the peristaltic wave is not reliable as an aid in diagnosing the location of the pathology.

Palpation of the abdomen is the method of examination which is rarely omitted. There are two sources of information by abdominal palpation: the abdominal wall and the viscera. Diagnosis of the "Acute Abdomen," so-called, depends more on the evidence produced by the abdominal wall than on that produced by the viscera. Acute inflammatory lesions produce local signs almost directly in proportion to the extent of involvement of the parietal peritoneum.

Percussion of the abdomen is quite limited in its field of usefulness. Aside from outlining solid organs, normal or diseased, and the demonstrating of free fluid, percussion is rarely employed. Percussion of the normal abdomen shows certain areas which are more or less constantly tympanitic and other areas which are dull. If one routinely percusses the loins, he is better able to diagnose small collections of free fluid. The percussion note varies in the different stages of acute abdominal disease. Either general peritonitis or early obstruction will give a more tympanitic note than in the later stages, when all the tissues are water logged and the intestines are full of fluid.

Auscultation has not been practiced in examination of the abdomen except in suspected cases of obstruction or peritonitis. Peristaltic sounds may be *almost* absent in a normal abdomen, but if peritonitis is suspected and no peristalsis is heard during a period of two or three minutes it is of considerable value. Of more importance is the variation in the *character* of the peristaltic sounds. The loud, booming peristaltic sounds which are periodic and associated with increased pain, are a valuable help in diagnosis of obstruction. Breath sounds and heart sounds are more audible over the abdomen when there is acute abdominal disease than when the abdomen is normal and are sometimes considered a bad prognostic sign.

During the past summer a rather unusual physical sign occurred in a case of perforated gastric ulcer. The case was one of advanced peritonitis, there was decreased peristalsis but the breath sounds were heard as distinctly over the abdomen as over the chest and were of the same character. The distension was marked and was thought to be due to the intestinal distension of a late peritonitis. When the abdomen was opened there was an outrush of gas and a resultant collapse of the abdomen. There was present a perforation of the stomach and very extensive peritonitis.

PYLORIC STENOSIS

DR. H. C. FLOOD

Following Beardsley's case report it was not until 1841 that attention was again attracted to the subject by the case report of Williamson. In 1842, Davoski reported the third. Little mention is made of the condition in the following fifty years until Hirschsprung, in 1888, one hundred years after Beardsley's original communication, published his observations on two undoubted cases of pyloric stenosis. Interest was aroused and the attention of the medical profession was directed to the study of the clinical manifestations of pyloric stenosis in infancy, and to the best method of treatment. The first surgical measure for the relief of the condition seems to have been that of Cordua, who in 1893 performed a posterior gastro-enterostomy with a fatal result. In 1897 Stern had a similar result with a gastro-enterostomy. In the following year, Lobker succeeded with the same operation. The first pyloroplasty was performed by Brissaud in 1900, with a successful outcome, and in the following year Nicholls performed the so-called Loreta's operation, divulsion of the pylorus, successfully. Stiles, in 1902, attempted a pylorectomy, with a fatal outcome. In 1907 Fredet suggested sectioning of the serous and muscular coats throughout the whole length of the tumor, leaving the mucous membrane intact. Rammstedt, with only a slight change in detail adopted Fredet's operation in its entirety. In its simplicity and efficiency, the so-called Rammstedt operation appeals to all surgeons and is rapidly supplanting other operative measures for the cure of pyloric stenosis.

Practically all authorities are agreed that hypertrophic pyloric stenosis is congenital. The question of the cause of pyloric stenosis is still undecided, but it seems to be evident that definite anatomical changes are underlying this condition.

Symptoms usually begin about the tenth day or perhaps may be delayed until the second or third month. They are quite definite in character: vomiting, at first of small amounts after each feeding; later, when the disturbance is fully marked, practically all food ingested is expelled and the vomiting becomes projectile in character, so forcible and propulsive in type, that in some of the cases we have seen, food has been shot from the mouth several feet from the patient. Bile is rarely seen in the vomitus. The latter consists of the food taken and large amounts of mucous. Tumor is present in about 60% of the cases but is not always easily located, and when present is usually found to the right of the umbilicus. It may be concealed by the overhanging edge of the liver. In size it is about that of a small olive and freely movable. Visible peristaltic waves are a constant phenomena and are best seen immediately after the infant has taken food. They may occasionally be noted after gently stroking the abdomen in the region of the stomach. The rhythmic wave passes from left to right and ends over the region of the pyloris, serving as a landmark to the surgeon. Loss of weight may be marked. In the milder cases weight may remain stationary for a long period, to be followed by a sudden and excessive loss. As there is no toxemia, if the condition is not relieved, death takes place by starvation. In the long standing cases acidosis is usually a factor to be considered.

It is not intended to engage in the controversy over the relative merits of medical and surgical treatment of hypertrophic pyloric stenosis. From our limited experience, it is our opinion that the treatment of all cases, either partial or complete, lies in the hands of the surgeon.

The preoperative and postoperative care of these cases is of the utmost importance. Before operation an endeavor is made to combat acidosis and supply fluids to the little patients by either enteroclysis of a five per cent glucose and soda solution, ordering five to ten drops per minute one hour out of every three; or if it is not tolerated, the same solution may be given instilled into the rectum from one to two ounces at a time every three or four hours, elevating the hips after each instillation. Brandy in minim doses may be given by mouth.

Following operation there is usually a stormy period for twenty-four or forty-eight hours, with high temperature and rapid pulse. This usually subsides without any medication. Practically the same routine is carried out as before operation. In addition, glucose and soda are given by mouth. Feeding of diluted breast milk or diluted cow's milk may be started as soon as consciousness returns. Vomiting persists for some days after the operation, gradually subsiding, and later disappearing entirely.

REACTIONS FROM INTRAVENOUS INJECTIONS OF ARSPHENAMIN

DR. L. C. BIXLER

The treatment of syphilis in recent years has been based largely on arsphenamin or one of its derivatives as the starting point. The reactions from their use have been very frequent and most varied. Most of them fortunately are immediate, transient, and not of great moment. Some of them, though not frequently, are more serious, and a few are fatal.

The seriousness of some of these reactions was brought to the writer's attention recently by the following case:

W. F., age 50, married, gave a Wassermann four plus. Arsphenamin 0.4 gm. was administered intravenously without any reaction beyond a slight looseness of the bowels. One week later a second 0.4 gm. was given. Several hours afterward diarrhea set in, followed by nausea and vomiting. Later his temperature rose and lassitude developed. On the second day a macular rash appeared, first on the trunk, then on the face, and later becoming general. Somnolence was marked. The vomiting and elevation of temperature persisted for four to five days, then gradually subsided. There was no jaundice. He made an uneventful recovery. His urine showed no albumin, blood or casts. No examination of the blood was made.

Frequency of occurrence: Harrison (1917) in 80,000 injections on 10,000 patients, had 124 reactions, 26 of which were severe, 24 moderate, 74 mild. There were eight deaths, one to each 10,000 injections.

Moore and Keidel in 47,000 injections in 9,000 patients, on whom were used salvarsan, diarsenol, and neoarsphenamin, had 22 reactions, with 5 deaths, one death to each 9,400 injections.

The "Report of the Cologne Arsphenamin Commission" states that if the dosage of 0.6 of neoarsphenamin is never exceeded, the danger of fatality is only one to 162,800. Whereas if this dosage is exceeded, it becomes 54 times as great, i. e., 1 to 3,000.

The "Committee Report on Mishaps with Salvarsan" (Munch. Med. Woch., 67, 1920) computed 225,780 injections of arsphenamin, neoarsphenamin, and arsphenamin-sodium, with 20 deaths, one to each 11,289 injections. One instance of jaundice occurred in each 5,000 injections.

Symptoms: Under "Clinical Side Effects" from the administration of arsphenamin, Harrison mentions among those occurring *during* or *immediately after* the injections, vasomotor disturbances, syncope, pain in gums and teeth, and peculiar taste in the mouth.

Following the injection by a few hours, but occurring the same day, were rigor, rise in temperature, headache, vomiting, diarrhea, pain in the back, and cramp in the legs, urticaria and herpes.

At various times, from a day to a month or longer, after a single injection or a course of such, were albuminuria, stomatitis, chronic headache, lassitude, loss of appetite, weight, sleep, erythema, dermatitis, jaundice and severe cerebral symptoms.

Additional symptoms met with by others are coma, convulsions, encephalitis and polyneuritis; acute dilatation of the heart, thrombophlebitis; necrosis and gangrene; pruritus, petechial hemorrhages; macular, maculopapular, vesicular and exfoliative rashes; argyria; pneumonia and bronchitis; nephritis, acute or chronic.

Etiology: Age and sex have little effect. Whites, according to some, are twice as prone to reaction as negroes. The duration of the disease plays little or no part. Strickler found that both syphilitics and nonsyphilitics may experience similar reactions following intravenous administration of arsphenamin; that endotoxins play either no rôle or a very unimportant one; that the percentage of reactions was the same in both. Moore and Keidel had two cases of exfoliative dermatitis in nonsyphilitics.

Reactions follow all preparations and all brands of the arsphenamin compounds, perhaps more so with some than with others. All are toxic.

Dosage has a marked influence. Sargent states that among the cases he has studied, no reaction was noted when less than 0.3 gm. of arsphenamin was used.

The "Cologne Arsphenamin Commission" states that over-dosage (0.6+) is one of the main causes of not only fatalities but of encephatitis and dermatitis. In all cases of dermatitis, and in six out of ten cases of encephalitis, over-dosage could be shown to have been responsible.

As Guy points out the competency of the various organs are factors in the causation, i. e., lungs, liver, kidneys, gastro-intestinal tract.

Causes of reaction: Various attempts have been made to explain these reactions. Aside from errors in technic, they have been ascribed to anaphylaxis, to precipitates formed in the bases in the blood stream by the arsphenamin; by endotoxins; to the action of the arsenic on the endothelium of the capillaries, allowing deposits of arsenic to be formed without the vessel walls; to lowered resistance due to action of the arsenic on the liver and the bone marrow; to secondary infections; to the Herxheimer reaction; to the action of arsphenamin on tissues already damaged by syphilis.

Moore and Keidel however, have the simplest and the most useful classification for clinical work. They divide the dermatoses into the mild and the severe. To quote them at more or less length:

Mild rashes: urticaria, herpes and erythema.—In most instances these may be disregarded and more arsphenamin administered, with the certainty that sooner or later the tendency to hypersensitiveness will be lost.

Macular, vesicular and exfoliative rashes.—This is the more important group. Rashes of the type appear in from one to fourteen days. "The graver complications which occur with exfoliative dermatitis are: arsenical neuritis, jaundice, skin infection, bronchopneumonia and acute nephritis." The jaundice has been ascribed directly to liver damage, generally of the type of acute yellow atrophy.

"One of the striking features of the rashes of this group is their tendency to recurrence after further arsenical therapy. This has been emphasized in the past, so that in the minds of many syphilologists the occurrence of a rash of any type is a sufficient signal for the discontinuance of all further arsenic therapy.

Prodromal symptoms of impending arsenical poisoning are the macular, maculopapular and exfoliative rashes, with grave constitutional disturbances, itching, jaundice, changes in the urine and the blood. The latter consists of a leucopenia, eosinophilia, an increase in the large mononuclear-transitional type—the picture of aplastic anemia.

Dr. O. Pine queries:—Why does many a one reading a really fine paper make himself inaudible, while many a one with a paper of no special worth makes the welkin ring?

ABSTRACTS FROM AMERICAN JOURNAL OF OPHTHALMOLOGY

BY MATTHEW F. CZUBAK, M.D.

PHILADELPHIA

November, 1921

Disciform Keratitis: *W. C. and W. M. Bane.*—The etiology of this case of disciform keratitis was unknown. Injury, syphilis, smallpox and vaccine virus had been ruled out. Infection from without, neuropathic origin and tuberculosis were the remaining causes, but which it was, could not be decided. However, the greatest improvement was obtained under injections of 15 m. of 2% cinnamat of sodium given at intervals of 4-7 days. This is one of the drugs recommended in the treatment of various tuberculous lesions.

Late Traumatic Detachment of the Retina; Its Prophylaxis and Importance from a Disability Compensation Standpoint: *H. Gifford* claims that for some years past he can recall no case of detachment of the retina in a patient under 50, with the other eye normal, in which he has not obtained a history of a severe shock from a fall or blow on the head or eye, preceding the appearance of the detachment by a period of from a day or so to ten years. Deeply penetrating wounds cause late detachment, not from the contusion but from the formation of vitreous bands.

The liability to detachment years after a severe blow on the head or eye, in spite of apparently complete recovery from the immediate effects of the injury is of importance from the standpoint of prophylaxis and advice to the patient concerning settlement for damages or disability compensation.

He says that those not making a practice of dilating the pupil and very carefully examining the whole retina, will be surprised at the frequency with which, after seemingly trivial blows, are found small hemorrhages and minute areas of detachment.

In all cases of trauma to the eye, Gifford favors keeping the patient in bed, or sitting at ease with both eyes bandaged for at least a week, depending on the gravity of the case. Every patient is warned that he has a vulnerable optic which may become blind and is cautioned to abstain from games or occupations liable to result in trauma to the eyes for a period of two years.

Tenotomy and Looping for the Surgical Correction of Strabismus: *F. O. Schwartz.*—The author describes a new method for the correction of strabismus. He tenotomizes the rectus of the overacting side and loops the opposing rectus. This is done by splitting it in two and pulling each half away from its normal axis, forming as it were, two triangles with their bases proximal and their apices distal.

The two sides of each triangle are then approximated by sutures, which are first passed through a gold plate on the conjunctiva and are tied over a second gold plate on the opposite side of the conjunctival incision.

Retinal Angiosclerosis: *L. A. Copps.*—The three greatest causes of angiosclerosis are: 1. Intoxications, including the acute infectious diseases, focal infections, syphilis, gout, rheumatism, diabetes, lead poisoning and nephritis. 2. High blood pressure. 3. Senility.

As to pathology, the earliest change takes place in the intima of the arteries, with a relaxation of the arterial walls due to a loss of elasticity and contractility. This causes elongation which is compensated for by tortuosity of the retinal vessels. The terminal vessels first show this early relaxation. Proliferation and thickening of the intima, together with new tissue of elastic fibers, encroach upon the lumen in an uneven and eccentric manner. The endothelial lining usually remains quite normal, although there may be nodes formed from proliferating endothelium, resulting in further encroachment upon the lumen. Proliferative changes in the muscularis and adventitia may later take place. The veins undergo similar changes somewhat later. Degenerative changes intervene, first and mostly in the outer layers, due to lack of nourishment, the cells being cut off from the blood stream by the thick new tissue.

The ophthalmoscopic picture of hypertension without arteriosclerosis follows: 1. The vessels seem uniformly distended and full. 2. The light streak is broadened and increases in brightness with the tension until it has a copper wire appearance. 3. The arteries indent the veins. 4. Where an artery crosses a vein, there is an absence of light reflex for some short distance up and down the vein.

Angiosclerosis is first marked by a dilatation, tortuosity and pulsation of the arteries. The pulsation is not always seen; it is not the type seen in glaucoma but is a slight lateral movement of the whole vessel and is most marked in the bends. This pulsation disappears later but when seen in association with tortuosity, is almost pathognomonic of early arteriosclerosis. The arterial light streak becomes broader and brighter, assuming a silver appearance. These early changes are first manifest in the terminal vessels, and small vessels which formerly were invisible come into view. This is especially noted on the disc where the distended capillaries give it an even redness and may blur its outlines, the redness and obscure outlines simulating an early papillitis. The macular artery often best shows the change in the light streak, tortuosity and pulsation.

The stage of vascular rigidity begins with the arrest of the thinning, and relaxation by the hyperplastic processes. The ophthalmoscopic features of this stage are:

1. Changes in color of vessel; "silver wire arteries" when pronounced.

2. Opacities in the walls; best seen where an artery crosses a vein, the vein being lost to view a short distance each side of the artery. Light colored to sharply defined white lines on each side of the vessel.

3. Irregularity in the size of the blood column; uneven narrowing of the blood stream with a reddened disc is good evidence of angiosclerosis. The normal ratio of artery to vein is changed from 2:3 or 3:5 to 2:4 or less. Narrowing of the arteries is associated with dilatation of the veins, especially in the smaller venous twigs, which become distended, tortuous and apparently increased in number and may have a corkscrew appearance. As the disease advances the tortuosity tends to decrease in the arteries and increase in the veins.

4. Distortions at arteriovenous crossings. The underlying vein lies parallel to the artery for a short distance on each side of the crossing. The veins become indented, sometimes leading to ampulliform dilatations just distal to the artery and frequently to tortuosity more distally. The pointed appearance of the veins, often seen, is an optical effect due to the gradual obscuring of the vein by the thick arterial wall.

5. Edema of the retina. This is usually localized, especially about the disc. When associated with redness of the disc, it resembles papilledema; when edema is present in the disc, there is an actual papilledema due solely to vascular disease. Small retinal exudates in the form of discrete white spots may be present.

6. Clouding of the vitreous. This is a condition not described by most authors. It appears as a very fine haze over the disc and surrounding retina, obscuring a clear view of the vessels and accentuating the red appearance of the disc. The disc at times seems as red as the setting sun seen through the low haze of a dusty summer day. The cloud or haze indicates an increase of toxins in the blood stream.

7. Retinal hemorrhage. In the advanced stages there may be small retinal hemorrhages, few in number, usually near the smaller veins, sometimes on the disc, and rarely at the macula. Less commonly, larger retinal hemorrhages or vitreous hemorrhages are seen.

8. Optic atrophy. In advanced cases, atrophy of the nerve may be seen. This may be due to insufficient nourishment because of endarteritis in the central artery or to pressure on the nerve by the sclerosed ophthalmic or internal carotid arteries.

The ocular circulation must be regarded as a part of the cerebral system, just as the nerve is a prolongation of the brain, and disease of the retinal vessels is very good evidence of the existence of the same condition in the brain. The presence of sclerotic changes in the retinal vessels presupposes with certainty a similar state in the cerebral vessels but the reverse does not necessarily follow. Due to the irregular distribution of the sclerotic processes, any area of the brain or the whole retinal system may escape.

Eye Findings in Brain Injuries: *N. M. Black.*—Ocular changes from injuries to the head and brain may be due to: increased intracranial pressure; injury to or destruction of cortical visual centers or visual tracts; general or localized meningitis; cerebral infection. The extraocular manifestations are: muscular paresis; paralyses; conjugate deviations. The intraocular are: choked disc; optic neuritis; retinal hemorrhages of all grades.

The visual center and tract are: defects of the visual fields varying from small unilateral scotomata to bilateral total loss of the fields or blindness.

Nystagmus may result from injury to the occipital region, probably due to the proximity of the labyrinth, the cerebellum and the medulla. Nystagmus following war injuries of the parietofrontal region was probably due to direct injury to the frontal center of coordinate movement. There seems to be no uniform relation between the direction of the ocular movement and the side injured. Nystagmus, as a rule, disappears either spontaneously or after operation.

Disturbances of motility are infrequent following brain injuries and are rarely permanent. The abducens and trochlearis are most frequently affected. The impaired or lost function may be due to fracture of the base; to basal meningitis; or hemorrhage, but is generally considered as due to marked rise of intracranial pressure.

Ocular palsies in gunshot wounds of the head are rare excepting in wounds of the sinuses and particularly of the superior longitudinal sinus and its tributary lacunæ. In these cases the symptoms are due to circulatory stasis, resulting in profound cerebral edema from occlusion by thrombus or by pressure of depressed bone, of the intermediary channels between the superior cerebral vein and the sinus. The remarkable tendency to recovery in uncomplicated cases is probably due to free venous anastomoses.

The value of the pupil in diagnosis of brain injuries varies with the nature and the location of the trauma to the brain. Miosis usually results early from the concussion, and is followed by mydriasis. Unequal pupils may be present or there may be miosis if there is hemorrhage into the pons, cerebellum or ventricles. Hippus and Argyll-Robertson pupils occasionally occur. Mydriasis in cases of traumatic brain pressure occurs immediately, when the intracranial pressure exceeds the blood pressure and depends upon: 1, a central conditional stimulation of the sympathetic; 2, a simultaneous diminishing of the sensitiveness of the oculomotor.

The condition of the eye grounds and the character of the visual fields determined by the perimeter are valuable means of diagnosing increased intracranial tension. The intraocular changes, seen after head injuries, frequently appear within a few hours and can hardly be explained on any other hypothesis than the mechanical theory.

The author believes that the absence of fundus changes in some cases of brain injury with marked general symptoms may be due to the fact that the intraocular tension is sufficient to counteract the effects of the intracranial pressure. Another explanation is that the location of the injury in the brain influences the eye ground changes. The tendency to choked disc in cerebral neoplasms increases from the anterior to the posterior pole of the brain and diminishes from the cortex inward. Age has some influence, youth being more liable to intraocular changes than age.

Bollock states that the anatomic findings and the clinical facts show the constant presence of ventricular hypertension and dilatation in the course of tumors accompanied by choked disc; and that dilatation of the third ventricle is always followed by choked disc, while dilatation of the lateral ventricles is only occasionally so followed; and that tumors situated in the posterior portion of the brain and in the cerebellum are most apt to cause dilatation of the ventricles.

Occipital injuries are frequently marked by visual field defects. Immediate unconsciousness of varying duration follows the injury, but when control returns, blindness of all degrees remains. Color fields show marked daily variations.

In brain injuries, when choked disc is found together with other symptoms of increased intracranial pressure, operative interference is imperative. The relief of pressure in practically every instance prevents consecutive atrophy of the optic nerve, when done in time. The finding of choked disc without the other symptoms of intracranial pressure is not sufficient indication for operation unless the intraocular manifestations are progressive in character. On the other hand, the absence of choked disc should in no wise preclude operative interference when other symptoms indicate its necessity.

Causes and Prevention of Blindness: *N. B. Harman.*—Harman analyzes the causes of blindness in a series of 4,288 cases. His conclusions follow:

1. Congenital defects and purulent conjunctivitis account for nearly all the cases of blindness in infants, the former comprising 30.14% and the latter 49.2% of the 63 infants studied.

2. Among school children, congenital syphilis is responsible for 33.31% of the blindness; gonorrhea for 19.89%; congenital defects for 27.13%; and the remainder to miscellaneous causes. This group consisted of 3,300 young patients.

3. In the adult class, taken for the most part from private practice, 15.09% of those partially and totally blind were suffering from some form of cataract; myopia was responsible for 13.93%; choroiditis for 12.77%; iritis and iridocyclitis for 9.29%; glaucoma for 9.12%; corneal diseases for 8.46%; vascular diseases for 8.12%; optic atrophy for 6.3%, and purulent conjunctivitis, including gonorrhea, trachoma and essential shrinking had decreased from the 49% of infancy to 5.64%. Accidents were responsible for 3.32%, while strabismus was responsible for 55 cases of amblyopia in one eye.

The percentages given in the third set of patients is fairly representative of the causes of blindness occurring in the population of England.

The data is presented from various points of view and prevention and prophylaxis are discussed at length.

Neighborhood Signs in Pituitary Tumor: *J. J. Keegan.*—The close relation of the pituitary gland to the sphenoid cells below and the optic chiasm and the third ventricle above, leads to the neighborhood signs related to these structures. The headache of early pituitary enlargement, due to the tension within its dural capsule, resembles sphenoid cell infection, in that it is localized fairly accurately in the sphenoid region and radiates to the temples. The next neighborhood symptom in many cases is the growth of the bony fossa.

About 80% of the pituitary tumors are solid adenomata and 20% cystic adenomata. Suprasellar tumors are many and varied, but none of these originate strictly from the pituitary gland.

The direction of early extension of pituitary tumors is of importance from the viewpoint of surgical therapy. Heuer believes that before the floor of the sella turcica has been eroded and even before the posterior clinoid processes have been destroyed, the pituitary tumor has broken through the diaphragm of the sella and become an intracranial growth. Also, that even if the floor of the sella is removed by early operation through the nose, the tumor will not or only slightly so, grow downward, but will grow upward into the intracranial chamber. All of the cases studied by Heuer of Johns Hopkins, and Adson of the Mayo Clinic, showed that by far the larger portion of the tumor had extended into the intracranial chamber. These facts account for the usual visual symptoms which depend upon pressure of the tumor on the under surface of the chiasm. The direction of growth subsequently may be in any one of five positions: 1, directly upwards against the chiasm; 2, forward in front of the optic chiasm and between the optic nerves; 3, backward behind the chiasm; 4, towards the third ventricle of the brain; 5, laterally on either side of the chiasm, involving the cavernous sinus.

Cope, Heuer and Adson found the extension forward between the optic nerves in all but two cases seen. The visual symptoms produced thereby prove first, the existence of intracranial extension sufficient to cause destructive pressure on the optic nerves. The result of this is a simple optic atrophy without the presence of choked disc. The second point of importance is the necessity of operative relief before this optic atrophy has progressed to an irreparable stage.

The frequent association of bitemporal hemianopsia with pituitary tumors is readily explained by the position of the several fasciculi in the chiasm and optic nerves. Pituitary tumor in its typical anterior extension would first press on the under surface of the chiasm and interfere with the ventral crossed fasciculus which supplies the lower nasal retina, thus producing a visual field defect in both upper temporal quadrants. Further anterior extension results in medial pressure on the ventral and dorsal crossed fasciculi and a more complete temporal hemianopsia. Color fields show an earlier defect than form fields.

Atypical visual field defects more often are due to suprasellar tumors, not of the pituitary gland proper.

Other neighborhood symptoms of advanced pituitary tumors with extensive intracranial infiltration are: oculomotor nerve involvement with possible paralyses; involvement of the cavernous sinus resulting in a moderate exophthalmos; destruction of the olfactory tracts with anosmia; epileptiform seizures with gustatory or olfactory aura from pressure on the uncinate region of the temporal lobe; epistaxis; intermittent discharge of mucus; and hypertrophy of lymphoid tissue.

Transplantation of Ocular Muscles: *R. O'Connor.*—The writer describes transplantations for cases of abducens and superior rectus paralyses and ptosis. He calls attention to the fact that paralysis of ocular muscles is usually a symptom of some disease or head injury and thus should be of interest to the internist and surgeon. The otologist is reminded that abducens palsy occurs occasionally in disease about the apex of the petrous portion of the temporal bone (Gradenigo syndrome). Relief is possible, despite most textbook statements to the contrary.

Operation should be done before contracture starts in the opponent of the affected muscle, because it may then be possible to avoid extensive tenotomies and so obtain a better final functional and cosmetic result.

EXCERPTS FROM STATE MEDICAL JOURNALS

FRANK F. D. RECKORD, M.D.
Assistant Editor

TRANS-DUODENAL BILIARY DRAINAGE

Thomas P. Sprunt, M.D., Baltimore, Md.

Lyon emphasizes the possibility of preventing some of the late surgical diseases by medical drainage during the period of vague dyspeptic symptoms before there have occurred lesions and symptoms sufficiently serious to warrant surgical interference. In view of the many cases of latent gallstones, this possibility would seem to be distinctly limited.

Other fields of usefulness pointed out are: (1) The drainage of infected bile ducts after operations on the gall bladder where surgical drainage has not continued long enough; (2) the drainage of badly infected gall bladders in patients who would be very poor operative risks or who refuse operation; (3) certain cases showing marked digestive upsets, the so-called "biliousness," in association with migraine. A precaution suggested after the drainage of badly infected material is to lavage the duodenum thoroughly, then give through the tube a large amount of water or an ounce of castor oil in order to flush out quickly all infective or toxic material derived from the biliary tract and remaining in the intestine.

Further observation by more workers is needed to establish the therapeutic value of this method. It may be noted that after an ordinary meal in the normal process of digestion, a certain amount of "medical drainage" of the bile passages occurs. We do not yet know the relative strength and efficiency of the stimulus furnished by magensium sulphate given through the duodenal tube and that of a heavy protein meal ingested in the usual manner.—*From The West Virginia Medical Journal, December, 1921.*

THE MANAGEMENT OF CERTAIN TYPES OF MALIGNANCIES

Jackson W. Landham, M.D., Atlanta, Ga.

1. In doing radiotherapy in malignant conditions a knowledge of histological structure, location, duration of lesion, age and size of the patient are important.

2. The treatment of basal cell epithelioma by means of fulguration, radium or x-ray shows as great a percentage of cures as surgery, and leaves much better cosmetic effects. The cure is also accomplished without pain to the patient.

3. Epithelioma of the mucous membrane of the mouth may be treated by the combined use of fulguration, radium and x-ray with results as favorable as those accomplished by surgery and without a mutilating operation.

4. In cancer of the breast—inoperable, postoperative, recurrent and metastases—intensive, deep x-ray therapy, supplemented by embedding radium into recurrent nodules and masses, accomplishes a cure in some of these cases, prolongation of life in many, and relief of the horrible symptoms in all.

5. Prophylactic radiotherapy in cancer of the breast, either anteoperative or postoperative, has a broad field of usefulness, and if used more generally mortality rates in these cases would be greatly reduced. All malignancies of the breasts should have anteoperative and postoperative prophylactic radiotherapeutic treatments.

6. Statistics in cancer of the cervix indicate results as favorable following radiotherapy as those accomplished by surgical removal.

7. The results accomplished in lymphosarcoma following x-ray treatments make this the method of choice.—*From The Journal of the Medical Association of Georgia, January, 1922.*

SUPRAPUBIC VERSUS PERINEAL PROSTATECTOMY

Frank Hinman, A.B., M.D., San Francisco, Calif.

In Dr. Hinman's experience perineal would seem to have greater advantages and fewer disadvantages than suprapubic prostatectomy. In the first place it is a much more benign procedure. He now has eighty-five consecutive cases without death, and his total mortality is only 2 per cent. In the second place it has given much better ultimate functional results. All cases considered, he has found over 90 per cent cures by way of the perineum as compared to 84 per cent suprapubically, and he has 100 per cent functional cures and no deaths in the last thirty cases, in which complete *en masse* enucleation has been practiced by way of the perineum.

The anatomic difficulties of perineal prostatectomy are not troublesome when mastered. As a matter of fact, it is an easier operation to perform than the suprapubic. The safety would seem to be shown by the fact that in none of Dr. Hinman's cases has he had incontinence as a result of injury to the external sphincter and in none of his cases has he had trouble from recto-urethral fistula. The rectum has been punctured at operation once in ninety-six cases and healed without fistula, and he has had no other or late fistula. Where the enucleation has been complete, there has been no trouble either with persistent perineal fistula. Familiarity with the anatomy of the perineum is a vital necessity to the urologic surgeon, if he operates for cancer of the prostate or disease of the seminal vesicles, aside from the advantages gained by the perineal operation in prostatic hyperplasia. Dr. Hinman believes it is time for the pendulum to swing back in its favor and that more urologists should learn to do perineal prostatectomy. Results do not justify its present disrepute or future neglect. Nevertheless, it demands technical knowledge and no surgeon should attempt it without the proper study and preparation.—*From Northwest Medicine, January, 1922.*

DIARRHEA IN BOTTLE-FED INFANTS

Harold E. Small, M.D., Fort Fairfield, Me.

After outlining treatment for this affection, the conclusions reached are as follows:

First. That many cases of diarrhea in bottle-fed infants can be controlled by giving milk and water mixtures boiled without sugar.

Second. That diarrhea that has persisted for some time without improvement is best treated with Eiweissmilch.

Third. That a starvation period is not always necessary or advisable in infants already in a much weakened condition.

Fourth. That in some cases not easily controlled, feeding with a barley gruel for twenty-four hours may result in marked improvement, probably by changing the intestinal flora.

Fifth. That many of us are inclined to place too much dependence upon drugs in this condition.

Sixth. That cathartics should be used only in a very few cases, especially those cases with fever, and then with intelligence.—*From The Journal of The Maine Medical Association, January, 1922.*

SOME OCULAR MANIFESTATIONS OF TUBERCULOSIS

Dr. H. H. Stark, El Paso, Texas

Our lesson from the primary stage of occult tuberculosis should be that all children have this infection, which is seldom treated, and that it may complicate any intercurrent disease or condition of the body.

The secondary stage teaches us that any region of the body is subject to an endogenous infection of tuberculosis from previously healed lesions, even in apparently healthy individuals.

The tertiary stage teaches that even in late life the individual is not free from the possibility of localized tuberculosis, even though of a milder type.

The active stage teaches us that many cases, with symptoms of eye strain and neurasthenia, should have more than ordinary physical examination to exclude tuberculosis—that we should stop visualizing tuberculosis as an activity of the lungs, demonstrated by the usual physical examination, and visualize it as a focal infection, which, under favorable circumstances, is self-limited, but ready to become active again at the site of the original lesion, producing symptoms due to toxemia, or distributing the infection to any part of the body.

The general pathology may be applied to any organ or tissue of the body. Therefore, the author asks the physicians in their different lines of medical work to apply to their branch of medicine the experience of the oculist in hopes of relieving by medication conditions previously thought to be only surgical.—From *Southwestern Medicine, January, 1922.*

PULMONARY TUBERCULOSIS AND SYPHILIS

H. G. Carter, M.D., Burkeville, Va.

Through the therapeutic test we have demonstrated that syphilis of the lung is not so rare as textbooks would have us believe. If this conclusion is not logical, then the equally important fact has been demonstrated that syphilitic treatment is of decided benefit to certain cases of pulmonary tuberculosis and it is most significant that these cases show negative sputum and positive Wassermann.

There are no pathognomonic signs or symptoms of pulmonary syphilis. X-ray findings are possibly helpful in a certain percentage of cases according to recorded literature; this has not been verified by us. The final diagnosis rests on improvement under syphilitic treatment in those cases showing negative sputum and positive Wassermann.

Finally, salvarsan and mercury can be administered safely to those cases of syphilis complicated with tuberculosis if the disease has not reached an advanced stage. The effect on the course of tuberculosis in the majority of these cases is beneficial. Iodides cannot be used. In the far advanced lung lesions with positive Wassermann and negative sputum, marvelous cures can be had in some cases by the mixed syphilitic treatment which is justified in all such cases.—From *Virginia Medical Monthly, January, 1922.*

TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM

Dudley C. Smith, B.S., M.D., Charlottesville, Va.

In syphilis of the nervous system the process usually begins soon after the initial inoculation.

Early treatment of all syphilitics prevents most of the late manifestations of syphilis in the nervous system. General practitioners should be able to treat safely and adequately a large percentage of cases of syphilis.

The earlier a case of neurosyphilis is diagnosed the better the therapeutic results to be expected.

Preponderance of opinion favors the combination of general and intraspinal treatment of syphilis of central nervous system.—*From the Virginia Medical Monthly, January, 1922.*

The savage Saracen has myriads slain with bloody scimitar.
How many, O medico, will bite the dust by thy metabolimeter?

COMMUNICATIONS

To the Editor of The Pennsylvania Medical Journal:

Sir: "Profitable Reading for the Doctor," by Dr. Joseph McFarland, in December's issue of the Journal, is of lively interest to every physician desirous of broadening his knowledge. He who has experienced that keen pleasure attainable only by "drinking deeply of the Pierian spring" will not be satisfied with the list of books mentioned. An outline of history, for instance, should stimulate the reader to peruse the major histories from which the outline was compiled. "Ancient History," by Rollin; "The Decline and Fall of the Roman Empire," by Gibbon; "History of Civilization in England," by Buckle; "Intellectual Development of Europe," by Draper; and "Studies in Church History," by Lea, are examples of histories of high quality by able writers.

Dr. McFarland classifies "Gulliver's Travels" as an extravagant romance. It has seemed to me that this unmatched work of Swift should be considered primarily a satire upon the human race.

The Rubaiyat of Omar Khayyam impelled me to read the other Persian poets, and I found the epic of Firdusi, the odes of Hafiz, the Gulistan of Saadi, the Majnun and Leila of Nazami, the Yusuf and Zuleika of Jami, and the Masnavi of Jelaluddin, most, if not all, of superior merit, though not so fortunate as to have the genius of a Fitzgerald to translate them.

In order to fare best it is necessary to provide for one's self at the source. Leisure moments of the physician can be spent in acquiring a reading knowledge of such languages as French, German, Italian, and Spanish. To read Dante in the original Italian is much more satisfactory than a translation by some one whose genius cannot evolve any kind of epic. It has been said that it takes a genius to translate a genius, and that this seldom happens, a notable exception being Omar Khayyam and his translator, Fitzgerald. Even Pope has not given us the grandeur of the meter and concept of Homer, who must be read in the original Greek to be appreciated fully. Some translators have taken great divagations from the original. Compare the German of the "Löwengarten," by Schiller, and the English translation, "The Lady and the Lion," where the translating rhymester has sacrificed the sense of the original to make a rhythmic holiday. I cannot conceive how the peculiar beauty of "Pécheur d' Islande," by Loti, can be grasped in any translation. On this principle, I have read the dramas of Racine, Molière, Beaumarchais and Schiller, the stories of de Maupassant and Daudet, the poems of Béranger, Victor Hugo, Verlaine, Villon Coppée, and Heine, the autobiography of Cellini, the "My Prisons" of Pettola, the novels of Balzac, "Das Wesen der Religion" of Feuerbach, "Orpheus" (French), by Reinach, and the Fables of La Fontaine, as well as many less notable writings, in their original tongues.

In the domain of natural history Lubbock's work on the Ant, Animal Intelligence by Romanes, the Mutual Aid by Krapotkine are of the first order, and in Natural Science and Philosophy, "Force and Matter" by Büchner and "The Riddle of the Universe" by Hæckel should command attention. No list is complete without that versatile writer Voltaire, whether it be his epic, "La Henriade," his "Age of Louis XIV," dramas, or essays. Dr. Diller has called attention to that incomparable essayist and skeptic Montaigne, and in the domain of history we must not forget Carlyle's "French Revolution," that mishandled topic of dynasty-worshiping historians, to seek true light on which one must read accounts in French which fail to be translated into English.

I should feel that I had been guilty of deep ingratitude if I failed to mention that modest little volume, "Self-Help," by Smiles, which shows that self-education is attainable to the ambitious, persevering mind, that obstacles such as lack of education, in any degree, are not insurmountable in any worthy line of human endeavor. In selection of reading material, we should cast aside prejudices. We should not disdain to read the orthodox, if radical, or vice versa. For example, "Travels in Tartary, Thibet, and China," by Huc, a zealot, can be read with profit and pleasure by any agnostic, and the pious Rollin and the agnostic Gibbon are historians of merit who should command the respect of all shades of belief or doubt. Read what the other side has to say. Books anathematized and consigned to extirpation in the past have become living forces in a later age, and many highly lauded in their day have failed to stand the test of time and are known only by title in the history of literature. It would take much more space than this to mention all the meritorious works that should be noted, but I cannot close without reference to that unique caricaturist and moralist, Hogarth, who should be far better known.

H. P. Ashe.

1304 Colwell St., Pittsburgh, Pa.
Feb. 20, 1922.

To the Editor of The Pennslyvania Medical Journal:

Sir: A book entitled "Waste in Industry," published by the Committee of the Federated Engineering Societies, was reviewed recently in the New York *Outlook.* The book was reviewed by Frederick M. Davenport, a member of the New York Senate and a professor of law and politics in Hamilton College. The following statement was made in this review: "The medical profession is actively hostile to the collective working out of plans for the reduction of illness loss in industry."

It is true that industrial medicine is still in its infancy, but inasmuch as such a statement as this is not in accordance with the facts and does great injustice to the medical profession the following facts are submitted for consideration:

The various state and county medical societies of the country have standing committees on Public Health and Preventive Medicine.

The state and county tuberculosis societies carry on a systematic, active campaign for the reduction of illness loss in industry due to the great white plague.

Harvard University has taken the lead in establishing a department of Industrial Medicine devoted to this very subject—"the collective working out of plans for the reduction of illness loss in industry."

In addition to this a very excellent and ably edited journal, *The Journal of Industrial Hygiene,* is maintained to further the interests of industrial medicine.

And added to all this is the personal experience of all of us who are actively engaged in work in industrial medicine, that there is never any trouble in securing the help and coöperation of the very ablest and best men in the profession in the treatment and care of the disabled employee.

Frederick S. Kellogg, M.D.

Pittsburgh, Pa.

To the Editor of The Pennsylvania Medical Journal:

Sir: The attention of all presidents of the county medical societies in general and of the chairmen of county committees on public policy and legislation is directed to *The Federation Bulletin,* which is issued monthly by the Federation of State Medical Boards of the United States, published by The Federation Press, 535 North Dearborn Street, Chicago, Illinois; subscription is $1 per year.

Very valuable and timely information is given in each issue pertaining to the pernicious activities of chiropractors and other strange cults, together with rules and regulations of the various State Medical Boards of Examination with regard to licensure, reciprocity, etc.

The information is also valuable to the deans of medical colleges and those who have to do with preparing graduates for state boards.

A. C. Morgan, M.D.

Philadelphia, Pa.

PROPAGANDA FOR REFORM

Another Remonstrance Against Mercury Inhalation.—During the last few years the attention of the medical profession has been directed by clever propagandists to the treatment of syphilis by procedures which involve the volatilization of mercury-containing mixtures by heat and the inhalation of the resulting volatile products. There is nothing novel in the principles concerned. Inhalations as well as fumigations of mercury have been tested at various times and the procedures have been abandoned because of the uncertain dosage. The Council on Pharmacy and Chemistry has refused to endorse preparations proposed for the treatment of syphilis which depended essentially on the administration of mercury by inhalation (Spirocide Not Admitted to N.N.R.). In this decision it is sustained by a reinvestigation of the inhalation treatment of syphilis carried out by Cole, Gericke and Sollmann. The investigators point out that the assumption that mercury is more promptly absorbed by the lungs was based on physical misconceptions. In fact, the mercury is condensed on the mucous membranes of the mouth, pharynx and respiratory tract. That in the mouth and pharynx is, for the most part, swallowed; and the absorption then takes place by the gradual conversion of the mercury into soluble compounds. In other words, the administration of mercury compounds by inhalation has no advantage over oral administration. It has the serious disadvantage of indefinite dosage (*Jour. A. M. A.,* March 4, 1922, p. 654).

Collosols (British Colloids, Ltd.).—Collosols is the trade name applied to certain alleged collodal preparations of drugs made in the Crookes Laboratories by British Colloids, Ltd., London. The Collosols are recommended for external, internal, intramuscular and intravenous administration. A few years ago the Council on Pharmacy and Chemistry investigated the Collosol products and found that some of the specimens contained precipitates and thus they were not colloidal. Commenting on the presence of precipitates, the Council pointed out that if "injected intravenously as directed, death might result, making the physician morally, if not legally, liable." In the cases in which the therapeutic claims for Collosols were examined, the claims were found to be either exceedingly improbable or exaggerated. In the Collosol "literature" there are frequent references to enthusiastic reports by Sir Malcolm Morris, K. C. V. O., F. R. C. S. E. This medical knight seems to have devoted his energies to the exploitation of Collosols and is reported to be one of the directors of the Collosol concern (*Jour. A. M. A.,* March 4, 1922, p. 674).

More Misbranded Nostrums.—The following preparations have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drugs Act: Krause's Phose phorists (Norman Lichty Mfg. Co.), consisting essentially of ferrous carbonate, asafetida and traces of phosphorus and claimed to cure diseases resulting from a shattered nervous system. Binz Bronchi-Lyptus (Edward G. Binz), consisting essentially of a solution containing oils of eucalyptus and peppermint, glycerin, sugat, acacia, alcohol and water, and claimed to be an efficient remedy for croup, whooping cough, sore throat, etc. Dr. Goodwin's Herbal Compound (Dr. F. A. Goodwin), a mixture of plant material containing chiefly senna, fennel, ura-ursi and unidentified plant extractives, and sold for diseases of the stomach, liver, kidneys, nerves, bowels, bladder, etc. Dubois Pecific Pills (W. J. Baumgartner), consisting essentially of aloes, ferrous sulphate, calcium carbonate and sugar, claimed to be a reliable female tonic, etc. 4-11-44 Capsules and Injection (A. J. Benson), the capsules containing cubebs and copaiba, and the liquid, a solution of zinc sulphate and salt, sold for the treatment of gonorrhea, etc. Metzger's Catarrh Remedy and Speds Oil (Metzger Mfg. Co.), the first consisting essentially of iodid and mercuric compound, gentian, alcohol and water, and the second consisting essentially of gasoline, oil of eucalyptus, methyl salicylate, menthol, camphor and ether (*Jour. A. M. A.,* March 4, 1922, p. 672).

Hale's Epileptic Relief.—According to advertisements in certain cheap weeklies, Hale's Epileptic Relief is "prescribed by the best New York specialists." These advertisements offer to send a $1.50 bottle free. Those who answer the advertisement receive a 4 ounce (118.4 cubic centimeter) bottle of a brown liquid and a small package of tablets, also a sample box of Hale's Liver Tablets. The American Medical Association Chemical Laboratory analyzed these preparations, and reported that the preparations give tests for ammonium, sodium, potassium and bromids, and that the bromid content is equivalent to 20.73 gm. of potassium bromid per hundred c.c. The tablets were found to contain emodin bearing (laxative) drugs—possibly aloes (*Jour. A. M. A.,* March 4, 1922, p. 672).

Veratrum Viride in Pneumonia.—Medical opinion is averse to the routine use of veratrum viride in the treatment of uncomplicated pneumonia. Claims made for the use of veratrum viride are advanced for other drugs, none of which has borne critical investigation. The error on the part of those who make these claims is the result of inadequate control observations. Advocates of veratrum viride, aconite and venesection believe that by the depression of the circulation produced by the treatment, they may lessen the extravasation of blood into the air vesicles and to this degree lessen the involvement of the lungs. The lack of demonstrable success of venesection has led to the discarding of this once almost universally employed mode of treatment of pneumonia. It is unreasonable to expect as much or more from aconite or veratrum than from venesection (*Jour. A. M. A.,* March 18, 1922, p. 835).

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EDITORIALS

MENTAL HEALTH PROBLEMS

One of the most valuable contributions dealing with mental health problems that will be of interest to the physicians, the legislators and the individuals of the community is found in a bulletin issued by the Bureau of Statistics of the National Mental Hygiene Committee, entitled "Comparative Statistics of State Hospitals for Mental Diseases."

The information that each of the seventy-seven hospitals of twenty-six states represents a capital investment of over one million dollars; that five hundred thousand dollars was the average sum required to operate each of these institutions in 1920; and that each new patient admitted the same year meant to some state the expenditure of $315 per annum per capita cost, will excite the interest of legislators and taxpayers.

A table showing the relationship of age, degree of education, environment and economic condition to mental disease would be of interest to those of the community who are interested in mental health.

Aside from the administrative data, which will be of interest to the hospital physicians, the general practitioner of medicine will be interested in knowing that of the 21,742 first admissions, the percentage of psychoses ranging highest in order were: dementia præcox, 27%; manic depressive, 16%; senile psychosis, 12%; paresis, 10%. Such a presentation clearly points to the physician the types of mental disease to which he should devote his particular attention, in order that mental diseases be controlled.

Although the figures and facts presented in this bulletin may be somewhat astounding, they should in no way excite pessimism, but on the contrary arouse a spirit of optimism as it clearly specifies the types of mental disease with which we have to deal and the progress made in the treatment of the same. Furthermore, we should be optimistic, inasmuch as these diseases may be reached through the channels of mental hygiene and by the general practitioner. For example, mental hygiene recommends to the taxpayers better laws for the control of propagation of the mentally deficient; to the citizens of the community it recommends a mode of living conducive to good mental health, and to the physician it recommends the early recognition of the disease and appropriate treatment.

To say that disease may be controlled to a great extent by the families of the community and the family physicians does not seem far fetched, as it is definitely recognized that alcoholic psychosis has been reduced and that paresis may be controlled by the control of syphilis, while manic depressive insanity and dementia præcox can, to a degree, be controlled by more strict social laws. Furthermore, more careful hygienic supervision of the aged with appropriate medication will undoubtedly control to a degree the mental aberrations occurring in this large group of people. J. A. J.

THE PHYSICIAN'S RESPONSIBILITY FOR MEDICAL LEGISLATION

At every session of the legislature for many years past various sects of the healing art have introduced bills providing for special recognition of their peculiar cult. Some of these have a slight relation to the healing art, but the majority are purely mercenary, playing on the credulity of the people "to fool the simple," as has been said.

The promoters of these cults make use of every possible expedient to secure recognition, regardless of the preparation they may have had in the treating of the sick. Many times this is comprised in a correspondence course or a short course in an alleged "school." The majority of such cults not only approve of the advertising of their exponents, but themselves advocate this course, emphasizing the selling appeal, making false claims to lure the unsuspecting, promising absolute cures for so many dollars in advance. They ignore the fruits of the many years of observation, study and analysis, ridicule the germ theory and the proved value of medication and surgery, denounce modern laboratory methods and the necessity for accurate diagnosis. To them disease is only an error of mind, a displaced vertebra, a nerve out of place or a muscle gone wrong. With their blatant advertisements in the public press and various other available places, and their positive promises of marvelous cures, they bid fair to convince an alarmingly large proportion of the public of their righteousness. To be sure the people will eventually learn their error, but not until much damage has been done.

It is for us to realize our responsibility for the protection of society from such a menace, to do our share to prevent the legalization of such quackery and fraud. The time is here for selecting the members of the House and Senate for the coming sessions and it should be of great interest to each citizen of this great commonwealth to see that the choice falls on the best men, those who have in mind at all times the best interest of their constituents and of the country at large.

Our legislators are the guardians of the people, and it is their duty to enact laws compelling those who wish to practice the healing art to qualify in the physiology, anatomy and chemistry of the normal human body, as well as in the pathology when the normal functions have gone wrong. A minimum standard of training should be established for all who wish to be licensed to practice any branch of the healing art. All candidates should come before one board of examiners, and if passed by the board they may then practice their chosen specialty.

Let it be known that the three schools of medicine have no quarrel with any one who is qualified for the treating of the sick; but it is our duty to see that representatives are elected to our legislative body who will enact laws compelling proper qualification as a condition preliminary to license. J. B. F. W.

THE DUTY OF VACATION

The duty of vacation-taking is a double one, at least. Beyond question, physicians are the hardest workers in the community; their responsibilities and calls for service are not limited to the ordinary working hours of the day nor of the week day. The demands upon them frequently produce physical fatigue; and all the mental functions, intellectual and emotional, are put upon a strain, as with no other large class of men.

The duty, therefore, of finding periods of rest and recuperation becomes a necessity. The duty and necessity are physiologic and psychic; body and mind, both, need rest and change. However, often there appears to be a combination of internal and circumstantial reasons driving the practitioner to continue with his tasks twelve months of the year. The demands of patients, the fear of losing a percentage of clientele, narrow self interests, and the economic phase of the question too frequently deter the physician from taking a vacation.

Most assuredly, it would be beneficial, mentally and morally, to secure a change and rest of one or two months. The waste in eleven months is more than sufficient to carry one through a month's trip. With the will so to do, a vacation can be arranged. Seek the quiet and peace of the hilltops, the woods, or the seashore. Nearly every physician now has an automobile, and most delightful trips can be arranged. F. C. H.

THE KEYSTONE OF JOURNALISM

American journalism is founded on service to the public. When it ceases to serve it no longer has a right to exist; and in proportion as its service is greater its influence is stronger, its utterances more authoritative. It is only by a policy of constructive idealism that any publication can achieve such a position in this age of competition. It is only by the support of all that is worthy, in whatever walk of life it may be found, and unrelenting opposition to all that is untrue and obstructive that journalism, either medical or lay, can justify itself.

It was with some such ideals as this that The Pennsylvania Medical Journal was founded —with the hope of doing its bit to increase the sum total of contributions to the structure of human health and happiness. As all men are human it has many times failed of obtaining its objective, but never has it forgotten its ideals; and to-day it is still endeavoring to live up to its opportunities and to its responsibility for representing the best elements in science and in medicine.

Not only does the Journal endeavor to present the best material obtainable in scientific contributions and in editorials, but it also follows up this editorial policy by a conservative advertising policy. To this end all advertising of products not approved by the Council on Pharmacy and Chemistry of the American Medical Association is refused. As the Council conducts a careful investigation of all medicinal products before giving its approval, this assures to the readers that statements made in the advertising pages are as reliable as statements made in the scientific contributions, perhaps more so, for these are not investigated by any scientific body before publication, and do not receive the official endorsement of the publishers.

With regard to nonmedical products the same caution is exercised as is now customary with all first-class magazines, either lay or scientific, which realize their responsibility to the public. Before admitting an advertisement of an unknown firm, its integrity is investigated and every reasonable effort is made to prevent any but reliable statements from creeping into the advertising pages.

This the Journal conceives to be a real service to its readers, for they may practically take the appearance of an advertisement in its pages as an official endorsement of the advertiser, and they may do business with that firm in the assurance that the Journal will use its full influence to secure a square deal for them.

The Journal believes advertising to be an educational element of real value. It is a matter of sound business policy for commercial firms to keep abreast of the latest scientific developments, and it is again a matter of sound business policy for them to present their concurrent development in the advertising pages of the conservative journals. The busiest doctor will find it well worth his while to read the advertising. He will pick up many a point that he would otherwise miss, and he will not regret the time thus spent in keeping in touch with the commercial expansion of the country. It is of as much or greater importance than the political development, for the latter is ephemeral and the former is the backbone of the country's economic structure.

On the other hand the Journal believes it is performing a real service to the business of the country in thus introducing reliable firms to the best elements of the profession in this state. At present there is a wave of direct-by-mail advertising, which the established firms know is at best an unsatisfactory way of reaching the physician. Among a great mass of circulars the busy doctor has neither time nor ability to discriminate between the good and the bad, the reliable and the unreliable; and consequently both are most apt to find the waste basket their final resting place. In fact, many doctors do not even open many of the circulars that come to them.

Thus, then, is the advertising service of the Journal a *double service*—in enabling the busy man to discriminate between commercial propositions without waste of time or effort; and in ensuring to the firms who patronize its pages that their advertising will not be thrown aside without a glance, but will in most cases be preserved and perhaps even months after may be productive of results.

This Journal believes in advertising, and it believes that its own pages are the best means of reaching the better elements among the profession of Pennsylvania. It believes that it can perform a service to both the profession and the commercial organizations of the country. But it can best realize this ideal only by the coöperation of all concerned.

We should be glad to hear from any of those mutually interested, and believe that a better understanding might well result thereby.

THE PHYSICIAN AND HIS PROFESSION

When the medical graduate comes forth from his college, filled to overflowing with scientific facts and theories, and possibly with the thought that he is the latest edition de luxe, and more especially if he has served one to two years as a hospital interne, he is very likely to become despondent at the slowness with which his talents receive recognition; and if he is dependent on what he collects from his practice, he frequently will become embarrassed. At such a time the temptation is very great to lower the standard of professional ethics. At this juncture, a word of sympathy, an exhortation to stand firm, may result in much good to the man, and to his profession.

It is incumbent upon the older members of the profession to point out to the "beginner" the legitimate ways of securing practice, and to warn him against methods that will bring reproach upon the profession and sorrow to himself. It is reported of Sir Andrew Clark that he told his pupils that he spent the first twelve years of practice in earning his bread, his second twelve years in earning his bread and butter, and not until the third twelve years could he indulge in luxuries. It is a greater task to qualify as a family physician than it is to obtain the medical degree; and it is the established family physician who should voluntarily and cheerfully instruct his juniors. They should be treated as if they were sons or younger brothers, for they are the rightful inheritors of our work. We owe it to our patients to provide them with competent successors. The young physician who relies wholly on his scientific knowledge and fails to study the various phases of human nature and to seek to please as well as to cure, will find a steep ascent to prosperity. F. C. H.

EX LIBRIS MEDICI

THE DOCTOR IN FRENCH LITERATURE

Our friend settled himself comfortably in his chair, lit a cigar, and meditatively soliloquized:

"Life in France is so different, so much more complex and competitive than here, that it is sometimes difficult for us to understand it. Though there are occasional exceptions that are recognized, success in life there is largely determined by three factors: first, birth; second, wealth; third, marriage with augmentation of wealth. If a lad does not come from a bourgeoise family with some inherited wealth, it is almost impossible for him to gain entrance to a profession. If, in spite of this handicap, he does succeed, his future is apt to be marred by the lack of influence, as well as by the lack of funds, and there is usually no prospect of assistance through marriage into a rich family. The young, friendless and impecunious doctor is therefore apt to engage in some questionable line of practice to secure immediate support, which so injures his reputation that he remains nobody and lives from hand to mouth.

"'Madam Bovary,' by Gustave Flaubert, is well known because of the contemptible character of its heroine, in whose misdeeds the reader is apt to lose sight of her husband, or to think of him only as the inconsequential husband of an adulterous wife, but his life illustrates what I have just said. He was badly born, that is, was the son of poor and unintelligent people. He received a partial education in poor schools, and failed in his first attempt to obtain a medical degree; but, though stupid, he was successful the second time through memorizing the answers to the questions known to be asked. His mother selected the sphere of his future activity, Tostes, where there was only one old doctor, opposite whose house he was installed before he died. His mother also assisted him by marrying him to a widow of forty-five with an income of twelve hundred francs a year.

"There he lived, and there he brought his second wife, Mlle. Rouält, the heroine of the story. There, too, he carried on a practice of hesitation and ignorance that was eventually ruined by his single experiment. There was in the town a youth with a club foot, upon whom he desired to try tenotomy. He sent for books, read up the subject, had the lad persuaded, manufactured a box splint with screw controls for straightening the foot, and paying for it out of his own pocket, at last had the courage, in the presence of a number of the townsfolk, to perform the operation, which was declared a success. But later came the difficulty, for bandaging it too tightly, and confining it too firmly, the lad suffered great pain, then agony, then became very ill, and when the apparatus was finally removed, was found to have gangrene. Not daring further, he consented that a M. Canivet of Neufchatel be called in as consultant. Why he did it is not said, but as so often happens, the great man at once discredited him, and compelled to amputate the thigh, eclipsed Bovary's operation, and ruined him forever. He continued to eke out a precarious existence while his wife contracted debts that consumed all they possessed in the world, then destroyed herself with arsenic, leaving him desolate and destitute to remain but a short time longer.

"Now, that's what I'm talking about. No beginning, a bad ending. That is the French idea, and I suppose in France it is right.

"For contrast look at 'La Croisée des Chemins,' a new book by Henry Bordeaux. Dr. Pascal Rouvray is the son of a practicing physician of Lyons, who living upon a considerable estate, is in very comfortable circumstances. The young man is well educated, and has risen to be 'Chef de Service' in the nervous clinic at the Sorbonne.

"He is of joyous disposition, a great proponent of personal freedom, and enjoys life in Paris away from the domestic 'foyer' and free from care. He is also secretly engaged to marry Lawrence Avenière, a Parisian girl of great beauty. In the midst of all this his father dies, and at the settlement of his affairs after the funeral, Pascal is surprised to learn that his grandfather had years before left a legacy of debts which his father had labored for many years to satisfy in order that the family honor should be maintained.

"Pascal is now confronted with an unhappy choice: either he can repudiate the remaining debts (most of them had been paid) and return to Paris to complete his career, as his inclination prompts; or he can remain at Lyons and continue his father's rural practice, pay the remaining debts, clear the family name, and educate his younger brother and sister, as his mother wishes and his conscience suggests. This latter is a very difficult thing for one with his ideas of personal freedom, and he frets under the suggestion. Then there is Lawrence; how will she feel about provincial life after Paris? Could she stand it?

"He finally decided to give up the home, return to Paris, marry, and settle down at his career. He does so, tells the whole matter to Lawrence, and everything is concluded. But conscience pricks him. Why not finish the work his father labored so hard to achieve? Is not his first duty to his family? (That is a very strong point with the French.) So gradually his decision is reconsidered, his purpose changed, and a letter sent to Lawrence asking that she come to his lodging to learn about the matter while he packs, as there is very little time. She pays no heed to the letter, train time comes and he goes. Later he learns that she has married a friend of his, Felix Chassal. In the country he works for fifteen years, pays off all the debts, acquires large experience, writes treatises upon nervous diseases, educates his brother and sister, before he returns to Paris at the call of the Faculty of Medicine, to be Agrégé professor at the Sorbonne.

"He is not there long before he receives as a patient a lady in whom it requires but a glance to recognize Lawrence Chassel. She pretends illness, has herself examined so that he may see that she is still beautiful as ever, comes again, recalls the old days and the old love, complains of present disappointment and unhappiness, arranges walks and talks in the parks and forests, until with the return of the old intimacy come the old feelings, and though he has now long been married to a woman for whom he has great affection, passion carries him away. One day Lawrence arranges that they shall meet at an empty house, formerly the Avenière home. There, all alone, the doors being shut, she throws herself upon a *chaise longue* while he falls at her feet in a burst of passion.

"Just as he is about to take her into his arms, she springs from the chair, gives vent to a torrent of words, and gives him to understand that all this has been planned to bring him to her feet that she may taunt him with his one-time desertion of her, and his contemptible conduct of the past. She has no love for him, only revenge, and this is her method of obtaining it—first to arouse him to a frenzy of passion, then at the moment of expected gratification to deny him. They part, and he goes home to find that while his eyes were blinded by his revived love for Lawrence, his wife's eyes had been opened to his disaffection, his daughter had become recalcitrant to his wishes and scarcely to be dissuaded from a certain folly, and other domestic matters were in chaos.

"Morally aroused to the enormity of his blind passion and bitterly condemning his folly, he sets to work at the reconstruction of his 'foyer,' not an easy matter, as his wife had left him and gone back to their country home. His single satisfaction is that between him and Lawrence, nothing had happened. But the intent was there, and it festered in his soul. So he worked, and so he wooed his wife, until all of his domestic affairs were straightened out and he rose triumphant above all, attaining to a new and chastened moral altitude.

"It seems quite clear that the author finds the explanation of this triumph in the excellence and natural nobility of the Rouvray family. That being the case, Pascal only did what was to be expected of him, just as Bovary did what was to be expected of him.

"A rather amusing doctor may be found in Anatole France's little book 'Histoire Comique,' in the person of Dr. Trubet, called by the people of the theater among whom he practiced and by whom he was much admired, Dr. Socrates. Despite its name the story is not funny, but tragic, but the doctor is interesting.

"You may be interested in George Ohnet's 'Dr. Rameau.' He is religio-philosophic, and rather deep, but the book is good reading for those who like that sort of thing. I fear that I bore you with my long stories, but I can't forget Balzac's 'Country Doctor,' and in his account of Dr. Banaissais you will find a heroic story of a man who gave himself up to benevolence and lived a life of self-negation and self-sacrifice that is full of interest. Nor can I neglect to call your attention to Balzac's other doctors—he has some twenty-eight of them—some of whom are very well drawn, and show the author's fondness for them. Two of them, in particular, Horace Bianchon and Desplines figure in many books and do a lot of talking that will give you a good idea of the first-class French doctor."

POSTMORTEM FINDINGS IN TWELVE CASES OF PLAGUE

Henry Hartman and Anna Bowie, Galveston, Texas (*Journal A. M. A.*, Feb. 18, 1922), summarize the postmortem findings in twelve cases of plague, eleven of the bubonic and one of pneumonic type, which occurred during the recent outbreak of the disease in Galveston.

THE VALUE OF CASE REPORTS

Rudolf Virchow once said that medical literature was sprinkled with case reports like fly specks. This and similar comments by others have caused many to feel that the reporting of single cases is an unworthy sort of procedure, more indicative of a desire for publicity than the wish to contribute to medical knowledge. Such a dergatory attitude is anything but just. Many of the most important contributions to medical science are in the form of case reports. The only way we can learn about rare conditions is by the accumulation of data provided by each of the several persons who have observed instances of them. No one case gives the whole picture, but when we have accumulated enough separate views we can reconstruct a working model of the process. The success with which this can be done depends largely on the accuracy and clearness of each of the several exposures. Some of the most interesting items in medical literature are case reports, and the well written report of an unusual case is always good reading. It requires much skill and judgment to select the essentials, and even more to discard the valueless items, to assay and interpret the existing literature. The preparation of a case for report is the best possible stimulus for accuracy and thoroughness in clinical and laboratory study. To be able to write a good case report is an art. Furthermore, since our knowledge of all diseases that occur infrequently must be built up from such isolated observations, it is an obligation to medical science to report each and every such case. Were this always done, and well done, we should know much more concerning the frequency of rare diseases, their manifestations, course and treatment, and there would be less occasion to puzzle about obscure pathologic conditions.—*Jour. A. M. A.*, Jan. 28, 1922.

Dr. O. Pine queries:—Why does not some keen searcher for the new discover a malady which can be labeled medicamentosis, and which can be precisely mensurated by an elaborate congeries of rubber tubing, valves, cutoffs, pressure bulbs, connecting links and mercurial indicator which can be labeled medicamentimeter, which can be operated only, hearken ye, by one specially skilled in the mysteries of the same who may be labelled medicamentimetrist?

THE SLANDERER

The very name invokes loathing. Though more or less in human form, this degenerate remnant of the silurian age is the most contemptible of creatures. The scandalmonger is disliked, the liar is despised, but the slanderer is loathed. Using falsehoods or facts that are distorted as some would juggle statistics, the slanderer spreads a most subtle poison, that blasts lives and reputations. Slander cannot be controlled any more than you can stop a lie, once it has gained credence. Compared with the social diseases, it is the greatest evil of our age. The slanderer is more dangerous and despicable than those misguided enemies of society who use bombs and poison secretly.

Whenever you discover a slanderer posing as an honorable member of our profession, let your conscience be your guide but be sure you do your full duty. —Malsbary, Editorial in the *Southern California Practitioner.*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

OPEN MEETINGS

Article II of the Constitution of the Medical Society of the State of Pennsylvania, under the heading "Purposes of this Society," includes the following: "To elevate the standard of medical education; to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more useful to the public in the prevention and management of diseases, and in prolonging and adding to the comfort of life."

There are several methods by which the plans above suggested may be developed. Individual members of the Society should feel obligated to accept a share of the responsibility in moulding public opinion; certain committees of component societies are responsible for the influencing of the lawmakers representing their respective counties; and finally, the component societies should meet their full responsibility by conducting at least once or twice each year an open meeting of the society to which the public of the community should be invited. Topics of timely interest are always available for discussion, and unless the organized medical profession of the county leads in the discussion of such subjects, it may not truthfully be said that the county medical society has performed its full duty to the public of the county.

In recent weeks several such meetings have been conducted throughout the state, to which the public were invited. At these meetings candidates for various legislative offices were asked to take part in the discussion. The writer, who has been interested in this subject for a number of years, has recently been privileged in several counties to take part for a second time in such meetings as are above suggested; and in each instance, he has been impressed with the favorable change in the attitude of the public and the various candidates for office toward the organized medical profession and its plans for public health legislation. Apparently this increased confidence is the result of open discussion of problems concerning only the health of the public. When the people of a community, county or state are convinced that our interests are unselfish and altruistic, they will naturally follow our leadership to secure the enactment and enforcement of just public health laws.

We sincerely trust that each of the sixty-three component societies in Pennsylvania will conduct at least one meeting open to the public during the year 1922. Component county society officers who are interested will find that the Councilor for their district will gladly assist in constructing the program and furnishing speakers for such meetings.

MEDICAL DEFENSE

"The Society will not be responsible for attorneys' fees incurred in the defense of any member, the defense of whom has not been approved by the Councilor for the District." The above is a direct quotation from Section 12 of Chapter V of the By-Laws, and is printed as a reminder to all component society officers and members, that there are a number of necessary steps to be taken before an attorney may be retained in the defense of a threatened member.

First. A member sued or threatened with suit, should obtain either from the secretary of his county medical society, the Councilor for the District, or the Secretary of the State Society, an application blank for medical defense.

Second. The application must be endorsed by the unanimous vote of all the censors of the applicant's county medical society.

Third. The application, endorsed by the censors, should be sent to the Councilor for the District for his endorsement.

Fourth. The management of the member's defense will then rest with a committee consisting of the Councilor for the District and the President and Secretary of the State Society.

Thirty days may elapse between the date of the service of summons upon the threatened member and the date for the formal appearance in court in his behalf. If the threatened member and the above mentioned officers of the county and State Society act promptly, there is ample time for selection of experienced attorneys subsequent to the observation of the By-Law, as quoted in the first paragraph. *In any event, a threatened member must not retain an attorney until complying with the above instructions.*

100% EFFICIENCY

We take great pleasure in publishing the following list of component county societies whose full 1922 membership have paid (March 31) their assessment for the current year:

County	*Secretary*
Adams,	J. P. Dalby
Armstrong,	J. B. F. Wyant
Berks,	J. E. Livingood
Carbon,	J. A. Trexler
Clarion,	C. C. Ross
Crawford,	C. C. Laffer
Dauphin,	A. J. Griest
Greene,	H. C. Scott
Huntingdon,	John M. Beck
Indiana,	J. M. Torrence
Jefferson,	N. C. Mills
Lancaster,	H. C. Kinzer
Lehigh,	J. Treichler Butz
Lycoming,	Walter S. Brenholtz
Mercer,	Edith MacBride
Montour,	J. H. Sandel
Schuylkill,	A. B. Fleming
Sullivan,	C. M. Bradford
Union,	C. A. Gundy
Warren,	Elizabeth S. Beaty
York,	Gibson Smith

PERCENTAGE PAID APRIL 21ST

County	*1921*	*1922*	*County*	*1921*	*1922*
Adams	96	100	Lancaster	96	100
Allegheny	99	99	Lawrence	95	93
Armstrong	100	100	Lebanon	86	97
Beaver	97	92	Lehigh	100	100
Bedford	76	82	Luzerne	91	80
Berks	100	100	Lycoming	100	100
Blair	92	90	McKean	93	84
Bradford	96	95	Mercer	100	100
Bucks	98	97	Mifflin	92	96
Butler	96	92	Monroe	79	85
Cambria	88	96	Montgomery	100	94
Carbon	93	100	Montour	96	100
Center	93	82	Northampton	95	97
Chester	100	100	Northumberland	92	96
Clarion	86	100	Perry	84	93
Clearfield	90	90	Philadelphia	99	86
Clinton	77	95	Potter	88	80
Columbia	93	97	Schuylkill	83	100
Crawford	100	100	Snyder	92	75
Cumberland	98	96	Somerset	87	91
Dauphin	99	100	Sullivan	100	100
Delaware	89	98	Susquehanna	64	84
Elk	100	95	Tioga	97	90
Erie	98	93	Union	94	100
Fayette	96	91	Venango	89	87
Franklin	80	88	Warren	74	100
Greene	100	100	Washington	96	87
Huntingdon	100	100	Wayne	88	88
Indiana	95	100	Westmoreland	93	98
Jefferson	92	100	Wyoming	100	83
Juniata	100	76	York	100	100
Lackawanna	91	77			

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since March 18. Figures in first column indicate county society numbers; second column, State Society numbers:

1921				
Apr. 6	Butler	52	7347	$5.00
1922				
Mar. 18	Lancaster	119–120	4827–4828	10.00
	Bedford	14	4829	5.00
	Delaware	82	4830	5.00
	Somerset	30	4831	5.00
	Cumberland	28–30	4832–4834	15.00
	Northampton	96–108	4835–4847	65.00
	Venango	31	4848	5.00
	Clarion	27–31	4849–4853	25.00
Mar. 18	Adams	22–23	4854–4855	$10.00
20	Venango	22–23	4856–4857	10.00
	Philadelphia	1401–1600	4858–5057	1,000.00
	Armstrong	37–45	5058–5066	45.00
	Northampton	109–116	5067–5074	40.00
	Somerset	31	5075	5.00
	Fayette	42–70	5076–5104	145.00
	Bedford	15	5105	5.00
21	Columbia	39–41	5106–5108	15.00
	Venango	34	5109	5.00
	Crawford	16–32	5110–5126	85.00
	Bradford	40–44	5127–5131	25.00
	Cambria	104–108	5132–5136	25.00
	Delaware	83	5137	5.00
25	Montgomery	129–140	5138–5149	60.00
	Huntingdon	20–25, 27–31	5150–5160	55.00
	Mercer	73–74	5161–5162	10.00
	Dauphin	134–136	5163–5165	15.00
	Carbon	20–28	5166–5174	45.00
	Blair	64–70	5175–5181	35.00
	Northumberland	51–53	5182–5184	15.00
	Venango	35–39	5185–5189	25.00
	Elk	20–22	5190–5192	15.00
	Venango	40	5193	5.00
	Lycoming	93–99	5194–5200	35.00
23	Dauphin	137–138	5201–5202	10.00
	Venango	41	5203	5.00
24	McKean	30–32	5204–5206	15.00
	Westmoreland	111–132	5207–5228	110.00
	Center	20–21	5229–5230	10.00
	Butler	25–32	5231–5238	40.00
	Franklin	35–42	5239–5246	40.00
	Jefferson	38–46	5247–5255	45.00
25	Chester	1–67	5256–5322	335.00
	Lehigh	76–100	5323–5347	125.00
	Venango	42	5348	5.00
	Carbon	29	5349	5.00
	Dauphin	139–142	5350–5353	20.00
	Lancaster	121–126	5354–5359	30.00
	Cumberland	31–33	5360–5362	15.00
	Columbia	42–43	5363–5364	10.00
	Westmoreland	133–134	5365–5366	10.00
	Franklin	43–45	5367–5369	15.00
27	Beaver	33–49	5370–5386	85.00
	Venango	43	5387	5.00
	Cumberland	34	5388	5.00
	Clinton	20–21	5389–5390	10.00
	Indiana	1–60	5391–5450	300.00
	Cambria	109–118	5451–5460	50.00
28	Dauphin	143–147	5461–5465	25.00
	Washington	103–112	5466–5475	50.00
	Butler	33–35	5476–5478	15.00
	York	2–110	5479–5587	545.00
	Clinton	22	5588	5.00
	Westmoreland	135–136	5589–5590	10.00
	Venango	44	5591	5.00
	Lancaster	127	5592	5.00
	Washington	113–114	5593–5594	10.00
29	Westmoreland	137–138	5595–5596	10.00
	Butler	36–38	5597–5599	15.00
	Cumberland	35	5600	5.00
	Dauphin	148	5601	5.00
	Lancaster	128	5602	5.00
	Juniata	7	5603	5.00
	Blair	71–78	5604–5611	40.00
	Northampton	117–125	5612–5620	45.00
	Bucks	67–77	5621–5631	55.00
	Montour	23	5632	5.00
	Delaware	84	5633	5.00
	Adams	24	5634	5.00
	Bradford	45–46	5635–5636	10.00
	Montgomery	141–146	5637–5642	30.00
30	Montgomery	147	5643	5.00
	Franklin	46	5644	5.00
	Westmoreland	139–140	5645–5646	10.00
	Somerset	32–38	5647–5653	35.00
	York	111–123	5654–5666	65.00
	Lycoming	100–108	5667–5675	45.00

Mar. 30	Chester	68–69	5676–5677	$10.00
	Cambria	119–120	5678–5679	10.00
	Jefferson	47–48	5680–5681	10.00
	Northampton	126–127	5682–5683	10.00
	Butler	39–45	5684–5690	35.00
	Washington	115–116	5691–5692	10.00
	Allegheny	988–1119	5693–5824	660.00
31	Dauphin	149	5825	5.00
	Lycoming	109–111	5826–5828	15.00
	Fayette	71–91	5829–5849	105.00
	Susquehanna	11–16	5850–5855	30.00
	Delaware	85–86	5856–5857	10.00
	Center	22	5858	5.00
	Snyder	9	5859	5.00
	Beaver	50–52	5860–5862	15.00
	Cumberland	36–37	5863–5864	10.00
	Clearfield	59–61	5865–5867	15.00
	Westmoreland	141–143	5868–5870	15.00
	Northampton	128	5871	5.00
	Clearfield	54–58	5872–5876	25.00
	Columbia	44	5877	5.00
	Lawrence	1–33, 35–47	5878–5923	230.00
	Clinton	23	5924	5.00
	Berks	122–137	5925–5940	80.00
	Crawford	33–52	5941–5960	100.00
	Washington	117	5961	5.00
	Bradford	47	5962	5.00
	Armstrong	46–50	5963–5967	25.00
Apr. 1	Northumberland	54–56	5968–5970	15.00
	Fayette	92	5971	5.00
	Armstrong	51–55	5972–5976	25.00
	Cambria	121	5977	5.00
	Perry	15	5978	5.00
	Westmoreland	144	5979	5.00
	Lawrence	48	5980	5.00
	Cumberland	38	5981	5.00
	Cambria	122	5982	5.00
3	Venango	45	5983	5.00
	Lebanon	35–37	5984–5986	15.00
	Blair	79	5987	5.00
	Northampton	129–132	5988–5991	20.00
	Snyder	8	5992	5.00
	Westmoreland	145	5993	5.00
	Tioga	1–27	5994–6020	135.00
	McKean	33–38	6021–6026	30.00
	Erie	79–81, 94–100, 102–113	6027–6048	110.00
	Clearfield	62–63	6049–6050	10.00
	Schuylkill	1–110	6051–6160	550.00
4	Lackawanna	1–137	6161–6297	685.00
	Mifflin	23	6298	5.00
	Beaver	53	6299	5.00
	Huntingdon	32–37	6300–6305	30.00
	Philadelphia	1601–1800	6306–6505	1,000.00
	Clinton	12	6506	5.00
		111–118, 120–133	6507–6566	300.00
6	Juniata	8–10	6567–6569	15.00
5	Luzerne	70–106, 108,		
	Lackawanna	138–145	6570–6577	40.00
	Franklin	47	6578	5.00
	Butler	46	6579	5.00
	Allegheny	1120–1156	6580–6616	185.00
7	Lawrence	49–51	6617–6619	15.00
	Center	23	6620	5.00
	Montgomery	148	6621	5.00
	Dauphin	150–151	6622–6623	10.00
	Beaver	54–56	6624–6626	15.00
	Butler	47	6627	5.00
	Wayne	23	6628	5.00
	York	124	6629	5.00
	Tioga	28	6630	5.00
	Luzerne	107, 109, 134	6631–6633	15.00
	Mifflin	24	6634	5.00
	Blair	80–81	6635–6636	10.00
	Montgomery	149	6637	5.00
	Cambria	123	6638	5.00
8	Luzerne	44, 110, 119, 135–145	6639–6652	70.00
Apr. 8	Lawrence	34, 52–55	6653–6657	$25.00
	Lackawanna	146–151	6658–6663	30.00
	Westmoreland	146–147	6664–6665	10.00
10	Erie	114–118	6666–6670	25.00
	Clearfield	64	6671	5.00
	Cumberland	39	6672	5.00
	Northumberland	57–59	6673–6675	15.00
	Beaver	57–58	6676–6677	10.00
	Lackawanna	152–156	6678–6682	25.00
	Venango	46	6683	5.00
	Somerset	39–40	6684–6685	10.00
	Somerset	41	6686	5.00
	Chester	70–72	6687–6689	15.00
	Montgomery	151	6690	5.00
	Montgomery	150	6691	5.00
	Luzerne	152–158	6692–6698	35.00
	Elk	23	6699	5.00
12	Cambria	124	6700	5.00
	Huntingdon	38	6701	5.00
	Mifflin	25	6702	5.00
	Luzerne	159	6703	5.00
	Venango	47	6704	5.00
13	Butler	48–50	6705–6707	15.00
	Luzerne	160–167	6708–6715	40.00
	Erie	82–93	6716–6727	60.00
	Luzerne	146–151	6728–6733	30.00
	Center	24	6734	5.00
	Venango	48	6735	5.00
	Bradford	48	6736	5.00
	Monroe	11–12	6737–6738	10.00
14	Luzerne	168–181	6739–6752	70.00
	Lackawanna	157–167	6753–6763	55.00
	Beaver	59	6764	5.00
	Lehigh	101–105	6765–6769	25.00
15	Delaware	87	6770	5.00
	Schuylkill	111–113	6771–6773	15.00
	Franklin	48	6774	5.00
	Luzerne	182–186	6775–6779	25.00
	Washington	118–120	6780–6782	15.00
	Delaware	88	6783	5.00
	Northampton	133	6784	5.00
17	Potter	13	6785	5.00
	Montgomery	152	6786	5.00
	Allegheny	1157–1175	6787–6805	95.00
18	Elk	24–25	6806–6807	10.00
19	Westmoreland	148	6808	5.00
	Wayne	24	6809	5.00
	Luzerne	187–193	6810–6816	35.00
	Venango	49	6817	5.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The folowing changes have been reported to April 17:

Allegheny: *New Members*—Russel R. Jones, 116 Linden Ave., Edgewood; Reuben H. Pearlman, 1321 Fifth Ave.; David Steinman, 1543 Center Ave.; Harold E. Waxman, 5819 Forbes St., Pittsburgh. *Transfer*—George H. Shuman, Park Bldg., Pittsburgh, from Philadelphia County Society. *Resignations*—Edwin H. Parkin, Newton Center, Mass., formerly of Tarentum; Clarence R. Welfer, Los Angeles, Calif.; William C. Hocking, Los Angeles, Calif.

Armstrong: *Removal*—Henry B. Stone, from Kittanning to 3164 W. Fourteenth St., Cleveland, O.

Beaver: *New Member*—Basil T. Owens, Woodlawn.

Bradford: *Removal*—Charles M. Woodburn, from Sayre to 99 Main St., Binghamton, N. Y.

Butler: *New Members*—William J. Armstrong, 330 N. Main St., Butler; Earle L. Mortimer, Box 146, Petrolia.

Bucks: *Resignation*—S. Edward Fretz, Long Island, N. Y.; James N. Richards, Fallsington.

Center: *New Member*—Le Roy Locke, Fleming. *Transfer*—George T. Yearick, Hyndman, to Bedford County Society.

Chester: *New Members*—John S. M. Pratt, Coatesville; Mifflin W. Mercer, Downingtown; George W. Heck, Coatesville; Charles R. Palmer, West Chester; Henry E. Porter, Coatesville; C. Ira Pratt, Coatesville. *Deaths*—Robert B. Carey (Univ. of Mich., '71), of Glenlock, recently, aged 79; Laban T. Bremerman (Geo. Wash. Univ., '74), of Downingtown, March 31, aged 73.

Crawford: *Resignation*—Ralph E. Pond, Meadville.

Clearfield: *New Member*—Hiram O. King, Curwensville. *Transfer*—Andrew L. Benson, Phillipsburg (Center Co.), from Elk County Society.

Cumberland: *Removals*—Selden S. Cowell, from Huntsdale to Carlisle; Ambrose Peffer, from Carlisle to Newville. *Transfer*—Elmer E. Geissler, of Nanty-Glo, formerly of New Kingston, to Cambria County Society.

Dauphin: *New Members*—Robert M. Hursh, 224 N. Third St., Harrisburg; Oliver H. Swartz, 310 N. Spring St., Middletown.

Delaware: *New Member*—George C. Webster; 311 W. Seventh St., Chester. *Resignation*—A. Parker Hitchens, Washington, D. C. *Transfer*—Peter M. Keating, 2130 Pine St., Philadelphia, formerly of Wawa, to Philadelphia County Society. *Death*—Jerome L. Pyle (Jeff. Med. Coll., '85), of Gradyville, March 23, aged 65.

Erie: *New Members*—George A. Poux, 154 W. Eighth St., Norbert D. Gannon, 213 E. Ninth St., Erie; Arthur F. Davis, Northeast; V. K. Worster, Waterford. *Transfer*—George H. Clapp, Commerce Bldg., Erie, from Philadelphia County Society.

Huntingdon: *Transfer*—Benjamin W. Genung, James Creek P. O., from Luzerne County Society.

Indiana: *Transfer*—William H. Nix, Unionville, to Chester County Society. *Deaths*—Luther S. Clagett (Long Island Coll. Hos., '68), of Blairsville, recently, aged 78; John B. Carson (Jeff. Med. Coll., '89), of Blairsville, recently.

Jefferson: *Reinstated Members*—Daniel Ritter, Indiana (Ind. Co.); John C. Sayers, Reynoldsville. *Death*—Walter W. Matson (Columbia Univ. Coll. Phys. & Surg., '89), of Brookville, aged 57.

Lackawanna: *New Members*—Samuel Z. Myers, Wyoming Ave.; F. A. Bartecchi, Gibbons St., Scranton; Robert B. Mackey, Waverly; G. L. Higgins, Carbondale; R. M. Mackey, Clark's Summit.

Lancaster: *New Member*—Ira D. Heckman, Denver. *Removals*—John R. S. Martin, Jr., from Christiana to 1915 Wallace St., Philadelphia; Sedic A. Rine, from Lampeter to Port Trevorton.

Lawrence: *New Members*—William D. Wallace, 217 Wallace Block; R. M. Eagleson, New Castle. *Resignation*—Lenore H. Gageby, Long Beach, Calif.

Lehigh: *New Member*—Clifford J. Wickert, 47 So. Thirteenth St., Allentown. *Death*—Nathaniel C. E. Guth (Univ. of Penna., '73), of Allentown, recently, aged 72.

Luzerne: *New Member*—Stanley T. Monahan, 440 Carey Ave., Wilkes-Barre.

McKean: *Reinstated Member*—J. D. Donnelly, Bradford.

Mercer: *Resignation*—Florence B. Matta, Brownsville.

Montgomery: *New Member*—Daniel W. Shelly, Ambler.

Northampton: *New Members*—Joseph A. Stotz, 306 Cattell St., Easton; John A. Lentz, Northampton. *Resignation*—Leigh B. Shiffer, Easton. *Death*—John J. Mazza (Med. Chirurg. Coll., Phila., '10), of Bangor, recently, aged 34.

Northumberland: *Reinstated Member*—Clarence M. Malone, 202 E. Sunbury St., Shamokin. *Resignation*—Charles F. Campbell, Sunbury. *Death*—Charles J. Jessop (Jeff. Med. Coll., '74), of Kittanning, March 7, aged 71.

Philadelphia: *New Members*—Stanley E. Biddle, 5825 Chester Ave.; Henry Dillard, 234 So. Twentieth St.; Henry H. Hibsman, 5229 Greene St., Gnt.; Harold W. Jones, 1805 Pine St.; A. E. Smethurst, 2049 N. Thirteenth St.; W. Tuttle Stull, 2321 E. Cumberland St.; Benjamin Leff, 3074 Frankford Ave.; William D. Stroud, 1011 Clinton St., Philadelphia. *Resignations*—Robert C. Barrett, Smithfield, Va.; Caroline E. Smith, Philadelphia. *Removal*—Joseph F. Comerford, from Hardy, Ky., to Box 84, McVeigh, Ky. *Death*—Hanna Kinbom (Woman's Med. Coll., Phila., '01), of Philadelphia, March 19, aged 51.

Schuylkill: *New Members*—George H. Boone, Charles V. Hogan, G. H. Boyer, Pottsville; R. Guy Bashore, John W. Clay, Minersville; Joseph P. Morris, Harry T. Davis, St. Clair; Abraham Lebrudig, Frank H. Cantlin, Shenandoah; T. V. Buckley, Girardville; O. H. Mengel, Frackville; Robert D. Spencer, Fountain Springs; Guy A. Robinhold, Ashland; David A. Holland, Mahanoy City; Aaron H. Detweiler, Schuylkill Haven.

Tioga: *Resignations*—L. L. Hobbs, Blossburg; Lee W. Hughes, Tioga.

Venango: *Death*—Harry S. Stone (Sioux City Coll., Ia., '98), of Franklin, Feb. 16, aged 47.

Washington: *New Member*—Walter W. Schmid, McKean Ave. and Fifth St., Charleroi.

Westmoreland: *Reinstated Member*—Stephen W. Nealon, Latrobe. *Resignation*—Abraham Owaroff, Jeannette.

York: *New Members*—John C. Moss, York Haven; John C. Gable, Windsor. *Transfer*—Blaine B. Barton, Fawn Grove, formerly of Adrian, from Armstrong County Society.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 North Third St., Harrisburg, Pa.

WHAT OTHER JOURNALS PRINT

The North Shore Branch of the Chicago Medical Society has perfected an organization which it is hoped will have far-reaching beneficial results among members of the legislature.

Each doctor in the branch is constituted a committee of one to work against prospective members of the legislature who stand for vicious legislation. A large mass meeting has been called, at which every prospective member of the legislature is to be invited to appear and state his position on things medical. The following letter and pledge postal card were sent to every member of the branch and it was very gratifying to note the interest the rank and file of the profession is taking in the subject.

NORTH SHORE BRANCH OF THE CHICAGO MEDICAL SOCIETY

IMPORTANT MEETING

Do *You* Know What the Doctors are Going to Get at the Next Legislature? Pass the Word Along!

Dear Doctor: Your chance is at hand to acquaint the prospective members of the next legislature with the desires of the medical profession.

In the past, members of the legislature have complained bitterly of the fact that doctors fail to explain to them at a sufficiently early date the dangers to the public of vicious medical legislation. An eleventh hour appeal, the legislators say, is worse than useless.

This time we must not be caught napping. With your help we will not.

Recently thirty-five members of the North Shore Branch of Chicago Medical Society met and discussed the dangers resulting to medical practice from laws that—

(1) Dictate the practice of medicine.

(2) Tend to set fees.

(3) Give the so-called "practitioners," such as osteopaths and chiropractors, increased standing in the community, without setting for them a standard of education such as the regular practice of medicine requires.

We feel it is high time that medical men should get together and form an individual unit of vast influence, and through joint action and combined power take steps to use their efforts to educate legislative officials as to the safeguarding of the public along medical lines, and to work against candidates known to favor vicious medical legislation.

After the program at the regular meeting that will be held February 7th, medical economic problems will be discussed. Also steps will be taken to perfect in this branch an organization that will have as its object the inhibition of detrimental laws.

It is important for your future that you attend this meeting and hear the discussions. We want it to be the largest assemblage that we have ever had.

Executive Committee.

PHYSICIAN'S PLEDGE

I pledge myself to the following:

1. To cast aside party politics for the good of medicine.
2. To work and vote against all candidates who are in favor of undue extension of state medicine.
3. To work and vote for all candidates who are in sympathy with a single standard in the practice of medicine.
4. To vote against attempted enactment of laws by lay people that attempt to dictate therapy and fees.

Name ....

Address ....

I hereby donate $1.00 or more to help defray expenses. From *Illinois Medical Journal*, March, 1922.

The above is the message that the Medical Legislative Conference of Pennsylvania for some time has desired should reach every doctor in the state. The *Illinois Journal* has certainly well expressed what every physician should know and should do.

LEGISLATION AND THE A. M. A.

We reprint from the *Boston Medical and Surgical Journal* an article, which calls to our attention the relationship of the American Medical Asssociation to the constituent state organizations in the matter of legislation. We have been impressed for some time with the thought that a more constructive and coöperative plan of legislation should come through the A. M. A. A committee composed of representatives from each state and a like committee from the A. M. A. through their combined effort could formulate plans which would produce effective results. We trust that the delegates to the American Medical Association from this state will note this article, which may be a subject to consider at the St. Louis session.

At a symposium on the A. M. A., before the North Side Branch of the Chicago Medical Society, February 2, 1922, Dr. Horace M. Brown of Milwaukee, President-Elect of the Tri-State District Medical Association, spoke of the unrest and dissatisfaction in the medical profession due, as he thought, to indifference of the officials of state societies in looking after the interests of the general practitioner. He elaborated the difficulties encountered by the young practitioner and blamed the clinical groups in hospitals for the control of cases, leaving very little for the unattached doctor. He also claimed that the emotionalism of the day, as shown by the activities of the epicene (under the definition of the fat-thighed man and skinny-hipped woman), has antagonized medical practice by propaganda for reform and uplift theories, so that the young man is advised to enjoy the "beauty of service" without expectation of material reward. The result is that young men are not joining the medical societies but rather floundering about in a limited and unproductive field.

The next subject considered was the dissatisfaction with the A. M. A. He contended that the rank and file of the profession feel they are neglected by the A. M. A.; that the delegates do not serve the state or county medical societies or the individual members; and after spending all this time in presenting his impressions of the attitude of the members of the profession, he left the subject with the request that Dr. Alexander R. Craig, Secretary of the A. M. A., should answer and explain how the A. M. A. "can utilize its enormous influence for the benefit of its more humble but component members." Dr. Craig's reply is not printed in full, but the abstract seems to show that he simply gave a history of the Association and explained the functions of the various councils, the House of Delegates, and the work of the Board of Trustees.

While it is impracticable for the A. M. A. to meet the detailed difficulties of the isolated practitioner, desirable as that might be, this Journal would like to suggest that the larger questions of those policies relating to medicine could be more efficiently dealt with than has been the custom heretofore. Taking the Sheppard-Towner Bill as an example, although the organ of the A. M. A. did publish some criticisms of the bill, the complete analyses of all features of this measure appeared much more fully in lay publications, and the attitude of the *Journal of the A. M. A.* did not seem to be so definite as might have been expected. This bill is an illustration of the possibilities inherent in some forms of legislation which may affect public health and the practice of medicine. Other bills and measures affecting medical practice have been advocated in the past which have been important, and more schemes will be presented in the future. The A. M. A. could be made one of the most powerful agencies by and through which legislative bodies could be studied. Our lawmakers really desire information relating to benefits and dangers of measures presented as well as to the political effects of their decisions. They are entitled to respect in so far as they are honest servants of the people, but they should not be left without all pertinent information. The A. M. A. could present the highest type of information on all matters relating to public health and the maintenance of efficient medical service.

To this end the A. M. A. should establish a committee composed of representatives from all the states. This body should be paid a reasonable compensation for time given, and should study proposed legislation, decide upon a course of action and, with the dignity and power of the Association behind it, tell congress what should or should not be done.

There is very little medical organization to-day outside of scientific societies, but we ought to provide the government with expert authoritative advice. Until we do this, we should not whine and sulk because the people do not recognize the inestimable value of scientific medicine.

If this course had been pursued we might not now be subject to the humiliating requirements of the Harrison Act. If we had half the organization and determination of labor unions, the unjust tax and restrictions imposed by this law could be modified even at this late day.—*Boston Medical and Surgical Journal,* March, 1922.

NASTILY INDEPENDENT

Some doctors take particular pleasure in being nastily independent. They think it is smart to take no suggestions or advise from any one, and when they are asked to lend a hand in promoting something of direct interest to the medical profession as a whole they find delight in offering opposition openly, or silently through failure to coöperate. Is it any wonder that we do not accomplish more when it is so difficult to get the public or legislators to think along right lines in the consideration of medico-public questions? How often do we hear the statement, "You doctors never stand together!" It is true! Let us turn over a new leaf and show the public that we are a unit for the things that are right and for the best interests of all concerned. If we do this we will have more and better legislation for the maintenance of right medical standards, and we will head off the idiotic socialistic schemes which eventually will end in bureaucratic medicine.—*Jour. Ind. State Med. So.*

NEW AND NONOFFICIAL REMEDIES

Acne Combined Vaccine-Lederle.—A suspension of killed acne bacilli and killed Staphylococcus albus and Stapyhlococcus aureus. For a discussion of Mixed Bacterial Vaccines, see *New and Nonofficial Remedies,* 1921, p. 314. Acne Combined Vaccine-Lederle is marketed in various size packages containing graduated doses of the vaccine. Lederle Antitoxin Laboratories, New York (*Jour. A. M. A.,* Oct. 1, 1921, p. 1103).

Protolac.—A brand of calcium caseinate—N. N. R. For a description of the composition, actions and uses, and dosage, see *Jour. A. M. A.,* Sept. 24, 1921, p. 1023. Dry Milk Co., New York.

Benzyl Succinate-Seydel.—A brand of benzyl succinate—N. N. R. For a description of the properties, actions and uses, and dosage, see *Jour. A. M. A.,* Sept. 24, 1921. p. 1023. Seydel Manufacturing Co., Jersey City, N. J. (*Jour. A. M. A.,* Oct. 8, 1921, p. 1183).

Copper Citrate—P. W. R.—A brand of copper citrate —N. N. R. For a discussion of the actions, uses and dosage of copper citrate, see *New and Nonofficial Remedies,* 1921, p. 88. Powers-Weightman-Rosengarten Co., Philadelphia.

Mercury Benzoate—P. W. R.—A brand of mercuric benzoate—N. N. R. For a discussion of the actions, uses and dosage of mercuric benzoate, see *New and Nonofficial Remedies,* 1921, p. 192. Powers-Weightman-Rosengarten Co., Philadelphia.

Mercury Cyanide—P. W. R.—A brand of mercuric cyanide—N. N. R. For a discussion of the actions, uses and dosage of mercuric cyanide, see *New and Nonofficial Remedies,* 1921, p. 183. Powers-Weightman-Rosengarten Co., Philadelphia.

Mercury Succinimide—P. W. R.—A brand of mercuric succinimide—N. N. R. For a discussion of the actions, uses and dosage of mecuric succinimide, see *New and Nonofficial Remedies,* 1921, p. 196. Powers-Weightman-Rosengarten Co., Philadelphia.

Silver Citrate—P. W. R.—A brand of silver citrate —N. N. R. For a discussion of the actions, uses and dosage of silver citrate, see *New and Nonofficial Remedies,* 1921, p. 333. Powers-Weightman-Rosengarten Co., Philadelphia.

Silver Lactate—P. W. R.—A brand of silver lactate—N. N. R. For a discussion of the actions, uses and dosage of silver lactate, see *New and Nonofficial Remedies,* 1921, p. 334. Powers-Weightman-Rosengarten Co., Philadelphia.

Eastman Barium Sulphate for Roentgenology.—A brand of barium sulphate for Roentgen ray work—N. N. R. (see *New and Nonofficial Remedies,* 1921, p. 58). Eastman Kodak Company, Rochester, N. Y.

Kalmerid Germicidal Tablets Potassium Mercuric Iodid.—Each tablet contains mercuric iodid 0.29 gm., potassium iodid 0.58 gm., ammonium chlorid 0.12 gm., eosin "Y" 0.0005 gm., and yields, when dissolved in water, potassium mercuric iodid 0.5 gm., with an excess of potassium iodid. For a discussion of the actions and uses of potassium mercuric iodid, see *New and Nonofficial Remedies,* 1921, p. 198. Davis and Geck, Inc., Brooklyn, N. Y. (*Jour. A. M. A.,* Nov. 12, 1921, p. 1573).

Iodipin 10 Per Cent.—An iodin addition product of sesame oil containing from 9.8 to 11.2 per cent of iodin in organic combination. It acts in the system similarly to the inorganic iodids. It is not broken up in the stomach, but a portion of the iodin is split off when it enters the intestine; the remaining compound is readily absorbed, and, as in the case of other fats is largely deposited in the tissues, where it is slowly split up. Because of this behavior, the action of iodipin 10 per cent is exerted more slowly than that of the inorganic iodids. The dose is from 4 to 16 cc. (1 to 4 fluid-drams) three or four times a day. Iodipin is not marketed as such, but in the form of iodipin tablets 8 grains. Merck and Co., New York (*Jour. A. M. A.,* Nov. 19, 1921, p. 1655).

OSTEOMYELITIS OF PELVIC BONES

Of the cases reported by Emil S. Geist, Minneapolis (*Journal A. M. A.,* Dec. 17, 1921), three were of the ilium, two of the ischium, and one of the pubis. In only one case was there later joint involvement (hip joint). All of the cases presented a definite leukocytosis (from 12,000 to 20,000). The diagnosis was made in these cases by the history and the definite Roentgen ray findings.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntington—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

May, 1922

COUNTY SOCIETY REPORTS

BERKS—MARCH

On March 14th the Berks County Medical Society was favored with an illustrated lecture on Venereal Disease, by Edgar S. Everhart, M.D., Associate Director of the G. U. Division, State Department of Health. The films shown were those of the State Health Department on the diagnosis and treatment of syphilis and gonorrhea. A synopsis of Dr. Everhart's lecture follows:

It was unfortunate that the dictum of Ehrlich to the effect that one dose of arsphenamin was a cure for syphilis, gained general credence. During the past five years, the profession generally has recognized that many doses of arsphenamin given at regular intervals are necessary for treatment. This, in conjunction with the use of mercury, the State Health Department genito-urinary clinics use one-half the maximum dose in courses, and treat patients during the infectious stage of disease. Patients reporting to clinics who are able to pay for the services of a private physician, are referred to private doctors.

The program of the Department for venereal disease control includes educational, law enforcement and medical measures. The Department of Health asks the coöperation of physicians in reporting to the Department cases that do not continue treatment until rendered noninfectious, and the names of sources of infection who are promiscuously distributing a disease which is menacing the health of the public. The Department promises to hold such information as confidential. Patients who are menaces to the public health are quarantined and treated in suitable places set aside for that purpose. Clara S. Keiser, Reporter.

BRADFORD—MARCH

The Bradford County Medical Society held an open meeting at the courthouse, Towanda, on the evening of March 11th, and notwithstanding the thunderstorms of the afternoon and evening, some two hundred persons were present, including the four candidates seeking the Republican nomination for the legislature. The meeting was called to order by Dr. C. Manville Pratt, who presided with his usual grace and tact.

The first speaker was J. E. Sweet, A.M., M.D., F.A.C.S., Professor of Surgical Research, University of Pennsylvania, whose address follows:

IS "VIVISECTION" NECESSARY TO THE COMMONWEALTH?

J. E. SWEET, A.M., M.D., PHILADELPHIA

Before one can attain to a clear understanding of any question, one must know just what is to be included under the discussion. The meaning of the terms used must be clear; and often, in order fully to understand the significance of the terms employed, there is needed a knowledge of the conditions under which the controversy arose.

For example, it is not so many years ago that the question of the "Missouri Compromise" was a matter of acrid discussion; political platforms were built up around it; men were made and men were ruined by it; it led to a great civil war. But to-day it means nothing; the conditions under which the question became of moment were changed; the matter was relegated from an active position in the minds of men to the musty pages of history.

Let us therefore look into this question of "Vivisection" and "Antivivisection" from the historical point of view, tracing it from the beginning to the present day, until we can arrive at a clear understanding of the problem in its significance for us of to-day.

As far as I have been able to find with any degree of satisfaction, the term "vivisection" goes back to the time of the great Egyptian University of Alexandria, some 230 years B. C. Hippocrates and his followers had by this time taken medicine out of the hands of the priesthood, whose teachings had made the study of the dead human body a sacrilege; and here in Alexandria, for the first time in all the history of the world, human bodies were placed on the dissecting table; and, in addition, condemned criminals were cut up while still alive—were "vivisected," a term used in contradistinction to the term "dissected," the cutting up of a dead body. Of these two practices, I have no doubt that the Egyptians of the period were far more shocked by the dissection than by the vivisection, for they were certainly far more careful of the dead bodies of their ancestors than they were of the living bodies of their slaves. Even in Greece at this period, the exposure of unwanted babies, the literal throwing of them away, was practiced, and artificial abortion was lawful. With human life thus lightly held, with human life marketable, there can have been little regard for human, and still less for animal suffering, any more than there was centuries later, when gladiators fought with wild beasts in the arenas of Rome, when Christians were fed alive to the lions.

Nor did any great change in the attitude of human beings toward their fellow men, let alone the lower animals, creep into the pages of history for many, many centuries. Many of you can remember the fearful four years of travail of our own country, ere the birth of the child of equal rights for all men; and slavery is still extant in this modern world of ours. Even judicial trial by torture has not been so long extinct in civilized lands; it was not abolished in France until the time of Louis XVI, in 1789.

The change in the minds of men which led to the abolition of slavery, led also to a consideration of the better treatment of animals; and, indeed, twenty-two years before the Act for the Abolition of Slavery throughout the British Colonies was passed in 1833, that is, in the year 1811, legal protection for animals had been suggested by the English philosopher, Jeremy Bentham. His ideas were incorporated into the form of a bill by Lord Erskine and presented to the House of Lords, to be met by cat-calls and howls. How much alike are the minds of men throughout the centuries—even the legislative minds! I have heard bills concerning dogs meet the same reception in legislative halls a hundred years after Lord Erskine!

In 1822, still eleven years before the abolition of slavery in the colonies, a Mr. Martin, an Irish member of Parliament, succeeded in having passed the first Act for the Prevention of Cruelty to Animals; and two years later, in 1824, the Royal Society for the Prevention of Cruelty to Animals was instituted. Similar acts were passed by Parliament in 1827, 1835, 1837, 1849, and 1854. It is said that Mr. Martin was moved to action by the terrible treatment of their horses by the costermongers of London.

The movement seems to have spread to the Continent from England, although I have not been able to find in what year societies were founded in France and Germany. The S. P. C. A. of New York City was incorporated by Henry Bergh in 1866.

The Societies for the Prevention of Cruelty to Animals of Dresden and Paris in 1859 requested the opinion of a committee of eminent scientific men on the merits of the knowledge acquired by so-called "vivisection." The London society took up the question in 1860, and printed a pamphlet against "vivisection," by Mr. G. McIlwain. In August, 1862, an International Congress on the subject was held in London. The discussion was revived in consequence of the prosecution of Dr. Schiff, in Florence, in 1873-76, and resulted in the passage of the Act of 1876, which provides for the licensing of "Vivisectors" in England, the appointment of inspectors, and which act is still in force.

According to the Antivivisectionists themselves, Miss Frances Power Cobbe was the Apostle of Antivivisection. Miss Cobbe was shocked, as she may well have been, by the accounts appearing in several of the English newspapers of the cruelty practiced in the veterinary schools of Alford, near Paris. These accounts were sufficiently horrible. They referred, be it noted, not to scientific experiment, but to a course in surgery in a veterinary school. Miss Cobbe was then further outraged by accounts of the experiments of Professor Schiff in Florence, where Miss Cobbe was living. Finally she composed a book called the "Nine Circles." It is difficult to obtain a copy of this book in its original edition, for it was so filled with misstatement and error that it was recalled, revised and reprinted. Thereby Miss Cobbe seemed to have established a criterion for her followers, for inaccuracy and misstatement are the most striking features of all their writings.

About this time she founded the Victoria Street Society, but the exact date is not given in "The History of the Antivivisection Movement," by Mrs. Caroline Earle White. Exact dates have never meant much to the "Workers for the Cause." Haydn's Dictionary of Dates states, however, that the Society for the Abolition of Vivisection was founded in 1875 by Mr. G. R. Jesse, who died in 1898, leaving £10,000 to the society. A rival society, the International Association for the Total Suppression of Vivisection was founded in 1876.

In regard to the English Society, Mrs. White says that "at the epoch of its formation, it advocated the restriction of vivisection, but in a short time came out for its total abolition, till nearly the time of Miss Cobbe's death, some twenty-five years after, when it again changed its platform, much to her distress, for she was violently opposed to the change, to restriction of the practice." Therefore, from the very beginning of the Antivivisection movement, the formation of rival societies and the changing of platforms indicate that the members are not agreed among themselves. Those favoring restriction must believe that "vivisection" is a good thing under certain conditions, or at least a necessary evil, while the abolitionists admit nothing. This difference of opinion among them is still strong, as can be seen when the representatives of societies from different cities meet, as at committee hearings in Washington. I suspect that this very fact that the Antivivisectionists cannot agree among themselves, is the strongest proof that "vivisection" must have some good in it.

Not long before this time of which we have been speaking, an event occurred which changed the whole aspect of surgery—the discovery of general anesthesia. It is unnecessary here to go into the controversy of just who discovered the anesthetic properties of nitrous oxide, of ether and of chloroform; but ether was first being more generally used in 1846, and chloroform was first used in 1847. There is little doubt that the ancient surgeons possessed means of deadening pain. The medicinal use of opium is mentioned by Hippocrates. Even Cæsarean section is said to have been successfully performed by the Talmudists, in the third or fourth century after Christ, and it is to be hoped that some narcotic was at hand. But the discovery of ether and chloroform have changed modern surgery, have made possible its modern development, and also have changed completely the conditions of the animal experiment.

Now this innovation of general anesthesia for human surgery was not introduced everywhere in a moment; such things never are. And no doubt, therefore, the conditions surrounding the animal experiment in the decennium 1850-1860, at the end of which decennium the antivivisection question first arose, were not what they are to-day. To illustrate what I mean: The only experiment I have ever seen—in an experience in this kind of work now covering twenty-five years, extending over laboratories in Germany and France, England and America—in which a surgical procedure was carried out without general anesthesia, was one single experiment performed by a professor of physiology in a German university, who had been professor of physiology for over fifty years. His early work, therefore, went back to the days before general anesthetics were even known, and his attitude toward the whole question was for this reason different from the attitude of those who have grown up in this age of anesthesia. Even so, this experiment was done under a very heavy dose of morphia.

I have gone thus laboriously into the past in order to make clear one single fact. The word "vivisection" is an obsolete term. It originally meant the cutting up of a living body as the anatomist cuts up the dead body. In modern times no animal is cut up in such fashion. An experiment is simply a planned, definite surgical operation, and, like the surgery of to-day, conducted under general anesthesia. The word is kept alive by the antivivisectionists because of the implication, because it suggests dreadful things; while the correct term, "animal experimentation," implies and suggests nothing. I deliberately made use of the word in the title of my address to-night, hoping that it might attract people.

Still to speak of "vivisection" is just as accurate as it would be to call the delicate, attenuated, fore-shortened and hind-shortened, dyspeptic and consumptive covering of the middle portion of the anatomy of the girl of to-day a hoop-skirt! Yet our friends insist upon the word, and, in addition, include every experiment in which an animal is used, whether for feeding or for breeding, under the term "vivisection." Fine distinctions are also drawn, depending on who does the operation. An operation on the stomach of a man is a surgical operation. But if the same surgeon, with the same assistants, with the same anesthetist, with the same instruments, did the same operation on the stomach of a dog, it would be a "vivisection." If a doctor in a laboratory should castrate a dog for the purpose of studying the effects of the operation upon the animal's weight, it would be a "vivisection." If a veterinarian does the same operation on a dog belonging to an antivivisectionist, simply that the dog might not present her owner with troublesome puppies, the veterinarian would be cheerfully paid for his work; and if the farmers of the country do the same operation on thousands of horses, cattle, sheep, hogs and fowls, without anesthesia and without asepsis, it is an "economic necessity."

If you agree with me that conditions of to-day are so different from those of yesterday, that the very name of the subject under discussion no longer applies, that the conditions which prompted the opposition are all changed; then we can forget the past and consider two things: "What is being done in the commonwealth to-day?" and, "Is it necessary?"

Animals are used for experiments in feeding and in breeding, and every dairyman conducts similar experiments; they are being used by pathologists for the study of diseases, and the effects of poisonous materials; for the invention of new surgical procedures, and the training of would-be surgeons; for the production of various biological products, such as diphtheria antitoxin, etc.; and for the teaching of physiology (the action of the normal organs) and of pharmacology (the action of drugs).

It is futile to discuss many of these things with a real antivivisectionist. Many of these people are Christian Scientists, and if one does not believe in the existence of disease, it is surely a waste of time to try to convince him of the need for the study of disease, a thing which, in his opinion, does not exist. The same may be said of the discussion of biological products. According to these people, the wonderful results achieved in the late war in the control of typhoid fever represented a triumph of "sanitation." What they mean by "sanitation" I do not comprehend; for anyone who was there knows that "sanitation" in its accepted sense, did not exist in the trenches. Even the putrefying bodies of the dead lay where they fell. Sanitary conditions were worse than in any war of history, yet typhoid fever was less common than in civil life. Antityphoid inoculations and chlorination of the water supply represented the only improvements in "sanitation," two measures directed solely against germs. And the antivivisectionists deny the germ theory of disease!

Before discussing the question of the use of animals for the teaching of physiology and pharmacology, let us remember two things. First, a general anesthetic *is always used*. It is foolish for the antivivisectionists to claim that it is not, for the work could not be done without it, were there no other compelling reason for its use. Second, every large city of this country annually destroys thousands of dogs and cats, just to get them out of the way. In Philadelphia about 10,000 dogs are killed each year by a society composed mostly of antivivisectionists, just to get rid of them. Since there are so many to be disposed of, and since the animals used for this form of teaching are placed under a general anesthetic from which they never recover—a death as painless as can be imagined, certainly as painless as these very people impose on their victims in the pound, where they use a device for electrocution, then the use of animals becomes purely a pedagogic question: What is the best way of teaching the subject? There can be no question that the only way to master the intricacies of an automobile engine is to take it apart and see how the various parts work in relation to each other. How do you expect the physician to understand the working of the normal heart without having seen it in action?

Therefore, I say that the use of dogs and cats condemned to death in the pound, under full anesthesia, cannot be discussed as a waste of animal life, nor as a matter entailing suffering; it is a pedagogic problem.

As long as the pound is under the control of the Antivivisectionists, the question of the source of supply of dogs and cats for laboratories is possible of dispute; but I am glad to say that very recently the Board of Aldermen of St. Louis, by a ballot of 22 against 4, voted to sell dogs from the city pound to the medical schools.

I said that it seemed useless to try to discuss the value of the study of disease with those who do not believe in the existence of disease. I do not know the attitude of such people toward surgical affections. Whether a broken arm is only a matter of personal belief, I do not know; and I wonder whether a safety pin, put into his mouth by a baby, and drawn into the lung, is an error of faith?

Now, let us take the example of the baby who has swallowed a foreign body, or has drawn it into the air passages—a safety pin, or a tack, or a peanut. Such things do happen; how shall we get them out?

We have in Philadelphia a very remarkable pioneer in this field, Dr. Chevalier Jackson. He has developed instruments and methods by which he can find these foreign bodies, deep down in the air passages, can turn a safety pin around which has gone down head first, as it were, leaving the point to stick into the wall of the bronchus if you try to withdraw it, to puncture the wall and cause a fatal infection. Dr. Jackson has developed these instruments and these procedures by the use of three methods, each equally necessary, and is now teaching his art by these three methods to men from all over the world. His first step in practice and in teaching, is to learn to withdraw a foreign body, such as the particular baby has in his lung, from rubber tubes; then to practice on the dead human body. But neither of these methods is quite comparable to actual conditions in life, for in the living, the air passages are in constant motion, expanding and contracting with breathing, moving with the motion of the adjoining heart and great vessels; mucous is present and there may be some bleeding from the wound of the wall by the point of the pin.

The only opportunity to study conditions as they will be found in the baby is to use a living dog, a small dog, whose air passages correspond to those of the baby, and for the student to practice on the dog until he can introduce and manipulate his instruments in the living, breathing, moving lung. For the man who has never tried it on the living animal will almost certainly kill the baby in his attempts to introduce his instruments and to find the intruder.

The same is true in any field of surgery, though in none so clearly shown as in this example I have cited. There must be a first time for every surgeon. Shall this first time be on a dog or on a man, this first time when his is the entire responsibility?

The whole question in so far as it concerns surgery —and I speak now only as a surgeon—seems to me to be one for the legislators of the commonwealth to decide. It makes no difference to those of us who teach surgery whether we teach on the dog or on the human being. I only trust, if the legislators decide that dogs must not be used, that they will incorporate in their act a provision appointing committees of Antivivisectionists whose duty it shall be to explain to the poor voters of the commonwealth, the charity patients in our hospitals, why the beginners in surgery must try first on them rather than on a dog; for I can find neither moral nor sentimental (for while I am fond of animals, I love humans more), neither historical nor modern reasons why the dog should be preferred to the human race.

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Following Dr. Sweet's address, Dr. Henry D. Jump, of Philadelphia, president of the Medical Society of the State of Pennsylvania in 1921, spoke on "The Relation of the Medical Profession to Medical Legislation." He said in part:

"In all of its relationships to legislation the profession has maintained its traditional position of conserver and protector of the physical welfare of the people. This has been maintained at the expense of being called selfish and of wishing to establish a medical trust. Some have said, 'Let matters of pernicious legislation alone, for the blame for such must fall on the legislators; and that truth would ultimately prevail.' But such a course is antagonistic to our ideals of service. We must, as experts, advise against and oppose matters which are harmful to the people. History shows that the medical profession has been concerned with the passage of laws for: 1, improvement of general sanitation and hygiene; 2, prevention of particular diseases; 3, cure of serious diseases; 4, elevation of standards of medical practice.

"Among these we find the excellent quarantine laws which prevent the spread of contagion; laws for proper disposal of sewage, purification of water and milk supplies; compulsory vaccination, whereby smallpox has been practically eliminated; prevention of typhoid fever among soldiers, so that this was a very rare disease during the World War; prevention of social diseases; cure of diphtheria, lockjaw and hydrophobia.

"Antivaccinationists and antivivisectionists would repeal the vaccination law and prevent the use of such serums as are used to cure diphtheria and hog cholera. They would prevent animal experimentation, whereby so much has been done to improve our knowledge of human disease. They make a plausible case by perverting facts, telling half truths and drawing conclusions from lying premises. We are thankful that the enlightened legislator of to-day recognizes the falsity of their position.

"The profession has constantly elevated the standards of medical practice and proposes to spare no efforts to prevent the lowering of these standards by advocates of new methods of treatment. The attitude of the medical profession toward such cults is that taken by the Medical Legislative Conference last year toward the Chiropractic bill. This position was that if they have a good preliminary education, are properly instructed in the fundamentals, we care not what they practice. No man who knows the human body and is well educated will discard all proven remedies and limit his treatment to spinal adjustments or any other single effort. The people must be protected from ignorant practitioners.

"Medical men are urged to register and vote, that their influence may be felt.

"Legislators are told that information must precede legislation; that physicians are their proper advisors on medical matters and that they must decide all such matters on the grounds of righteousness and the welfare of the people.

"The laymen must understand that they may waste their wealth but must not trifle with their health. They must demand of the one whom they select to treat them, adequate knowledge of disease conditions, and must know there are no short cuts to health."

The papers were discussed by the candidates present. by Dr. Donald Guthrie, Father J. J. B. Feeley and Drs. Sweet and Jump. A vote of thanks was tendered to the latter for their interesting papers.

C. L. Stevens, Reporter.

FRANKLIN—FEBRUARY-MARCH

The February meeting of the Franklin County Medical Society was held in the Arbitration Room of the Courthouse, Chambersburg. It was called to order at 1:45 p. m. by the president, Dr. Miley.

The scientific program consisted of a symposium on Pneumonia. Dr. John K. Gordon, Chambersburg, discussed the earliest symptoms. Dr. Samuel D. Shull, Chambersburg, replied to the inquiry: "Can Pneumonia be Aborted?" Dr. Theodore Peters, Chambersburg, gave some suggestions for symptomatic treatment, following which a general discussion of the subject was entered into by the members present.

The March meeting was held on the 21st, in the Grand Jury Room of the Courthouse, and was called to order by the president. The meeting was well attended. Resolutions submitted by the Medical Advisory Committee, in relation to a reorganization of the American Medical Association, a change in policy of that organization and in certain forms in regard to election of trustees, were adopted.

A letter was read from the Secretary of the State Society asking that the society consider the need of the Medical Legislative Conference of Pennsylvania for funds. This matter was explained and upon motion it was decided to forward later a donation of fifty dollars.

Dr. Coffman spoke of the interest which had been expressed by members regarding the propriety of sending to the legislature from this county a member of the society or some one who could be depended upon to work in the interest of the medical profession and for the welfare of the people of this commonwealth along medical lines and against the so-called medical cults and isms, as well as against the socializing of the profession. The matter was discussed, but no definite action was taken.

A symposium on Influenza was opened by Dr. W. E. Seibert, of Greencastle, who discussed "The Etiology and Earliest Symptoms." Dr. Seibert outlined the history of influenza, speaking of the pandemics and epidemics that have visited this country. He spoke of the respiratory form which begins with coryza, etc., and of the more rare type, that of the gastro-intestinal form, which is ushered in by nausea, vomiting, diarrhea and collapse. He said that all persons are not susceptible to the infection, and that a true etiology, so recognized, has not so far been discovered.

Dr. Thos. D. White, of Orrstown, said that the treatment must be as the symptoms indicate and as they arise. The salicylates give good results. Early and earnest elimination is of great importance. Bathing is important—cleaning up, inside and out, and keeping clean. No immunizing serum that can be depended upon has yet been discovered, but Dr. White feels, however, that inoculation by vaccination promises much.

Dr. Frank N. Emmert, Chambersburg, said that in many cases of influenza the nasal sinuses are affected —antrum, frontal, ethmoid and sphenoid. Often the ear is involved and usually the involvement is of a serious nature, the infection being carried through the eustachian tube.

Dr. T. H. Weagley, in discussing the subject, said that influenza is responsible for a condition which shortens a man's life. He does not believe that anyone who has had the disease is ever again what he was before the attack. He especially recommended rest in bed as a very important measure in the treatment, and advised the use of morphine and atropin to sooth the excessive cough affecting some cases.

Dr. Gordon urged the use of codein or Dover's powder for the cough. He seldom uses morphine. He feels that the alkaline treatment does much good.

Dr. Bridgers believes strongly in elimination to rid the system of the poison from the infection. He gives the patient much water to drink until free sweating is induced.

Dr. Amberson, Waynesboro, thinks that influenza is the most treacherous disease with which man has to contend. He recommends supportive treatment, small doses of strychnin and light doses of quinine being quite effectual. John J. Coffman, M.D., Reporter.

HUNTINGDON—MARCH

The Huntingdon County Medical Society met at the Huntingdon Club, Thursday afternoon, March 9th, and was called to order by the president, Dr. Fred R. Hutchison, at 2:30 o'clock. The following members were present: Drs. J. M. Beck, J. R. St. Clair, C. G. Brumbaugh, M. B. Morgan, F. P. Simpson, H. V. Locke, J. M. Keichline, W. H. Sears, G. G. Harman, F. L. Richards, I. S. Plymire and W. A. Doebele.

The Committee on Revision of the Constitution reported progress. The secretary reported 23 members as having paid their dues. The society extended an invitation to the Censorial District to hold its June meeting at Huntingdon. Our May meeting will be held at the hospital, on May 12th, at 2:30 p. m. This is done because of the observance of National Hospital Day on this date.

Dr. Fred P. Simpson read an interesting paper on Infections of the Hands. Following is a brief outline of the paper:

The hand is a most highly specialized organ, and the surgeon dealing with infections of the hand must become expert in differential diagnosis of this branch of surgery. The diagnosis of *onychitis,* commonly known as "run around," seems simple, but as in felon, the diagnosis must be made and proper treatment given. The site of a *felon* is usually in a distal phalanx. After diagnosis is made, the proper treatment is incision on either side. When a *carbuncle* is situated on the back of the hand, it consists of an abscess with a buttonhole opening, usually of a dumb-bell shape. The symptoms of *lymphangitis* are red streaks, following the lymphatics. The various types were defined. *Sceptic infection* of the hand is very common, and the prognosis may be determined by a study of the leucocytes of the part. The treatment of this condition should be conservative. *Tenosynovitis* is found along the flexor tendons of the hand. The condition should be diagnosed early. The treatment is operative, should be bloodless and performed under general anesthesia. The tendon sheaths should be opened, following which an Esmarch bandage should be applied from the elbow to the shoulder and allowed to remain on eighteen hours, after which it should be removed for from six to eight hours. *Fascial abscess* is accompanied by excruciating pain with swelling over the accumulation of pus. In nine out of ten cases pus is found in the palm rather than in the dorsum of the hand. The treatment is incision over the most tender point.

In opening the discussion, Dr. Morgan stated that in the postoperative treatment of abscesses the part should be given rest. By the time most cases of felon reach the doctor there is bone involvement. The sac should be opened and drainage made with rubber tubing. Dr. Brumbaugh stated that in incising a felon the knife should be inserted down to the bone. In diagnosing tenosynovitis search should be made for crepitus. Dr. St. Clair cautioned against possible resulting stiff fingers. Dr. Doebele said that he obtained good postoperative results by the use of the therapeutic lamp. Dr. Locke recommended conservative treatment with cold compresses. Dr. Hutchison spoke of the palmer spaces, two of which are connected with the little and index fingers, and of infections under the annular ligament. He considers hand surgery major surgery. Dr. Simpson in closing said that the surgical treatment of tenosynovitis is not emergency surgery. It is a serious matter and deserves careful study. Dr. Sears observed that the paper was a most satisfactory one, and thus closed a very profitable afternoon.

At the April meeting Dr. Frontz will present a paper on Fractures of the Long Bones.

John M. Keichline, Reporter.

INDIANA—MARCH

At the meeting of the Indiana County Medical Society held on March 9, 1922, the following resolutions were adopted:

Whereas, The public and profession are being sold out to:

(1) Foundation control of "full time" medical education.

(2) Lay board domination and the "closed shop" hospital.

(3) Socialized state medicine, subsidized community health centers and hospitals under political or university control.

(4) Legislative dictation of therapy and fees.

(5) Demoralization of medical standards by the expansion of cults.

(6) Exploitation of the specialties by lay technicians. Therefore, be it

Resolved, That all delegates from the *Medical Society of the State of Pennsylvania* to the American Medical Association meeting in St. Louis, Mo., May 22-26, 1922, are hereby instructed to vote for:

(A) A change of policy and leadership in the American Medical Association, pledged to the immediate abolition of the evils mentioned and constructive protection of medical interests.

(B) The repeal of multiple representation and plural voting privilege by section delegates.

(C) The election of trustees for a period of two years; five trustees to be elected one year, and four the next, to prevent the trustees from perpetuating oligarchical rule. Be it further

Resolved, That copies of these resolutions be sent at once to the official organ of the Medical Society of the State of Pennsylvania, the Journal of the American Medical Association, and the Medical Advisory Committee. James M. Torrence, Secretary.

MONTGOMERY—MARCH

The regular meeting of the Montgomery County Medical Society was held at the Montgomery Hospital, Norristown, March 1, 1922.

The following members were present: Drs. George W. Miller, Simpson, Hurwitz, Hubley, Shearer, Wolfe, Beideman, Irwin, Kershner, Branson, Corson, Wright, William G. Miller, Parker, McKenzie, Heffner, Vedder, Kriebel, Bostock, Atkinson, Little, Hunsberger and Buyers.

The application of Dr. D. W. Shelly, of Ambler, for membership, was acted upon favorably and he was unanimously elected.

The society then entered into scientific business which consisted of a "Symposium on Influenza." Dr. John C. Simpson opened the discussion on "Bacteriology and Pathology of Influenza." Dr. O. C. Heffner continued with "Types of Influenza Since 1889." Dr. Thomas F. Branson ably spoke upon "The Treatment of Influenza." John C. Simpson, M.D., Reporter.

NORTHAMPTON—FEBRUARY

The regular monthly meeting of the Northampton County Medical Society was held on February 17, 1922, at the Kurtz Restaurant, Bethlehem, with the president, Delbert K. Santee, presiding. The meeting was started rather late on account of the extremely cold weather and badly snow drifted roads.

After routine business was transacted the president took up the scientific program, calling on Dr. William L. Estes, Sr., for his address. Dr. Estes was welcomed with applause, and asked that he be allowed to vary somewhat from the title of the program, that of "Modern Methods of Diagnosis." There being no objection, Dr. Estes gave a most enlightening and practical talk on the powers of observation and the other senses in coming to an early diagnosis, and asked the members not to wait too long for nor depend too much on the laboratory and scientific findings. He, however, did not deprecate these measures, but counseled their use to "clinch" the diagnosis. To sum up his talk, Dr. Estes impressed on us to observe, think and reason; and then, the obvious will rise to the surface like the cream in milk. Intuition will prove master of our senses and be our advisor in making diagnosis. A general discussion ensued, some stressing, while others broadened the different points.

The next in order was the informal talk of Dr. W. P. O. Thomason, of Easton, on the subject of "Our Society's Organization: Unity, Harmony, and Coöperation to a Purpose and for Results." The subject was most timely, well received, and was followed by the suggestion of Dr. Thomason that we include in our regular order of business a topic worded, "For the good of our Profession." It was moved, seconded and carried, that this suggestion be carried out and to be placed in the hands of the By-Laws Revision Committee to act accordingly. This will give us a time in the regular course of business to talk things over politically and otherwise.

A communication from the Medical Legislative Conference of Pennsylvania, G. A. Knowles, M.D., President, was read, and as it urged that a contribution of one dollar or more per member be appropriated towards the financial needs of the conference, it was moved, seconded and carried, that we appropriate two dollars per member for this purpose.

The County Tubercular Hospital, Milk, Constitutional Revision, and Bulletin Committees reported progress.

It was moved, seconded and carried that the Committee on Public Health and Legislation be directed to secure writers to disseminate constructive propaganda on subjects of medical importance in the local papers, etc., the object of the articles to be that of enlightening the public on health matters, and along lines in which they are being misled.

After lunch the meeting adjourned, to again convene in March, at Easton.

William A. Finady, Reporter.

PHILADELPHIA

JANUARY 25TH

Dr. J. Norman Henry, president, in the chair. *Problem of Venereal Disease in an Institution for Delinquents:* This paper was presented by Dr. Alice Weld Tallant, who in it spoke of her work at Sleighton Farms at Darlington, near Media, Pa. The school there has a capacity of one hundred and fifty girls between the ages of eight and eighteen years, and has as its object training and removal from temptation. Dr. Tallant has been in charge of the medical supervision there for the past fifteen years and has found venereal disease a problem.

At first the clinical signs of venereal disease only were considered, then later a routine cervical smear was made on all new or returned girls and cases of gonorrhea treated in the usual way. The Wassermann was used at first only on suspicious cases but was made routine in 1916. Never have they had any active lesions and the blood test is usually the first and only indication of lues. Any case showing a one-fourth unit or a delayed negative is considered as guilty until proved otherwise, and a second test is made.

The next problem that arose was the treatment. There were on the records eighty-four positives. These could not all be sent to the Philadelphia General Hospital nor could they be taken to the city for treatment. Therefore it was decided, and made possible through the efforts of Drs. Martin and Gray, that the treatments be given at the school. To date there have been 146 treatments given, thirteen positive cases have been discharged, only three of those having been treated less than six months. There are now thirteen girls rceeiving treatment.

The treatment given is neither new nor striking, since it is required, and since the school is a state institution and therefore extra care must be taken. Three decigrams of solution are administered by the gravity method, given in the afternoon, with lunch omitted that day, and with sodium bicarbonate and aromatic spirits of ammonia given after treatment. No treatments are given during the menstrual period. In all the treatments there have been perhaps three reactions and several sore arms. Diarsenol is the drug used in the intravenous method, arsphenamin intramuscularly. The iodide of mercury, 1/6 grain, is also given intramuscularly or by mouth. Fumigation has been employed to polish off ¼ plus or delayed negative cases.

The problem is twofold, infection and isolation. Many girls are kept there with active syphilis or with gonorrhea and never has there been an infection contracted at the school. The greatest danger lies in the cases with positive Wassermann reaction and no demonstrable lesions. Such girls handle no food until the test is repeatedly negative; they sit at their own table, wash their own dishes and clothes and have their own bath and toilet rooms.

The great question is whether or not, on discharge of patients with a doubtfully negative Wassermann or who are Wassermann fast, the prospective employer should be told of their condition. Dr. Tallant thinks there is no danger if they have had no lesions during their stay in the institution, and in this she is sustained by Dr. Edward H. Martin. The cases are required to come to clinic every three months after discharge, and in this way a close watch is kept upon them.

The value of the treatment lies in the prevention of later circulatory or nervous developments and also in the prevention of transmission. Dr. Tallant's best hope is that she, with her assistant, Dr. Maude Kelly and her resident at Sleighton Farms, is doing some part of the work of prevention which the State Health Department is carrying on.

Discussion on this paper was opened by Dr. John L. Laird, Director of Laboratories, State Department of Health, Philadelphia (by invitation). He said that his main purpose was collaborative rather than critical, in the nature of an explanation of the clinical interpretation of the Wassermann. A difficulty arises when there are discrepancies between various laboratories or even between reports of a single one, in a single case, and the question comes up, does a positive Wassermann always mean syphilis? If the technic of the test has been properly arranged and the titrations properly based, a plus *always* means syphilis. Can it always be positive in cases of syphilis and negative in cases not syphilis? This depends upon the antigen used.

Reviewing the principles of the test: if antigen, serum and complement unite, leaving amboceptor and sheep's cells, the reaction is positive; if, on the other hand, the serum and antigen remain uncombined and the complement joins with amboceptor and sheep's blood, the result is a negative one. If any antigen except a specific one is used, errors become evident either on one side or the other. The use of nonspecific antigens came into vogue because of the difficulty of obtaining syphilitic fetal livers.

Attempts have been made to increase the sensitivity of the normal organ antigens and cholesterinized antigens were developed. The reactions obtained with these are group reactions and a positive might be due to a number of other conditions due to cholesterin antibodies in the blood. A certain per cent of positive Wassermanns were found in diseases other than syphilis, especially the exanthemata, and in wasting tuberculosis.

The State Laboratory has lately used for antigen, livers of feti supposedly of syphilitic parents but wherein the Treponema Pallidum has not been found. It can be said that a positive does mean syphilis, except in an exceptionally toxic case of a chronic disease, especially tuberculosis, or where the serum is in poor condition.

In the Pennsylvania Department of Health the quantitative Wassermann reaction is reported in units. The known unit (the indicator) is the sheep's blood, and the test is based upon the amount of complement a certain amount of patient's serum is capable of deviating. If there is no hemolysis with one unit of complement the report is 1 unit, or one plus (equivalent to plus 4); if the serum deviates only a part of the complement the readings are ¾ unit (plus three), ½ unit (plus 2), ¼ unit (plus 1) or delayed negative, or plus minus. A diagnosis of syphilis is made on any reaction above ¼ unit.

Just enough complement to destroy the sheep cells is used—one unit—and a 10% suspension of sheep cells are employed. This use of one unit of complement allows nothing to happen to it except by action of the sheep cells.

As to the question raised by Dr. Tallant as to the advisability of informing prospective employers of a Wasserman fast reaction or a delayed negative, Dr. Laird said he thought that transmission after one and a half years of treatment is rare, and this, considered with the relations upon which the girl lives with the family who takes her, makes a failure to notify them of her condition justifiable. He closed his discussion with a few words in commendation of Dr. Tallant's work at the school.

Dr. Rivas said that the French investigators also were taking up the question of specific antigens.

Dr. Tallant closed by saying that Dr. Laird's approval of her sending out the Wassermann fast and delayed negative girls without notifying the employers was very gratifying to her.

Studies on Tropical Inguinal Granulomas and their Endemic Occurrence in Philadelphia: Dr. Alexander Randall began this paper by saying that there is a disease long recognized in tropical and subtropical countries, namely, granuloma inguinale, granuloma pudendi, ulcerating granuloma, etc., and noted especially the continual use of the word "granuloma" in connection with the diagnosis of this condition. The disease has long been recognized as a definite entity, but practitioners in temperate zones have discarded it as a tropical affection, with which they have no intimate contact.

In 1904 Donovan, in the tropics, described a definite organism which he claimed to be specific and for a long time this was never questioned.

In May, 1920, three cases were reported in Bellevue, N. Y., the diagnosis substantiated by a doctor from Venezúela. A number of years ago one case had been reported from San Francisco, imported from St. Louis.

The similarity of the illustrations in the Bellevue report to conditions which Dr. Randall had seen at Blockley, led to an investigation which revealed in January, 1921, five men and two women in the wards there. This number has now increased to twenty-one cases. Attendants at the Philadelphia General Hospital can recall that this condition has existed on their wards for the past twenty-five years.

The symptoms, aside from consciousness of an open lesion, are negligible. There are, however, distinctive signs; the lesion is characteristic. It starts as a small, raised, noninflammatory papule, which on rupture yields a sero-sanguinous fluid, and remains an open sore. The groin is the most common site, although it has been observed also on the prepuce, scrotal wall, anus, rectum and vagina. It appears, not as a destructive lesion with sloughing, but as an exuberant overgrowth of healthy granulations, and in the labium major there is an accompanying elephantiasis. The progress is slow and the lesions show no tendency to heal. There is proliferation from the periphery. As ten years is the longest time that any of these cases has been in Blockley the ultimate result cannot be told. In the past year one case died, but the death could not be ascribed to the granuloma. There is present also a secondary anemia, but there is nothing characteristic in the blood picture, no leukocytosis, no marked eosinophilia. Of nineteen cases the Wassermann was positive in five. (In these cases active antiluetic treatment was always carried on before any other therapy was given.)

Many conditions have been confused with this, among them chancroid, tertiary syphilis, condyloma accuminatum, condyloma latum, tuberculosis (especially tuberculosis cutis) and lupus.

Dr. J. H. Small has carried on most of the bacteriologic work on the cases at the Philadelphia General Hospital, and has endeavored to get the Donovan bodies. The lesion is dried with gauze, a platinum wire run down into the tissue, and a thin smear is made and fixed in the usual way. The Giemsa or Wright stain is used. He found a large intracellular capsular diplococcoid organism, showing nesting. In some slides the capsule stains pale blue, in others there may be seen dark blue bodies surrounded by a capsule, in others the capsule remains unstained, and the organisms appear as small thick bodies.

The prognosis in the past has been very poor. Salves, vaccines, excision, arsenic, x-ray, all have been tried with little or no success. However, tartar emetic in a 1% solution given intravenously as a test, has been found to be specific. This is administered in a 4 c.c. dose, .04 gm., increased to .1 gm., or a 10 c.c. dose. Twelve doses are given after healing takes place.

Dr. Randall then showed on the screen a number of lesions, and also organisms and a lesion experimentally produced in a rabbit.

In the discussion that followed it was brought out that while the exact poison of the Donovan organism is not determined, and while the organism has not been cultivated, the ease of diagnosis by smear and the specificity of tartar emetic make the disease an entity. Transmission is a factor to be studied. In the acute stage the swelling is made up largely of endothelial cells and mononuclears, but later fibrous tissue is laid down, thereby accounting for the enlargement in the cured stage. It was urged that the term "tropical diseases" be dropped, since so many conditions so called have been found endemic in the temperate zones, and the neglect of these "tropical diseases" by the average practitioner was deplored. In considering the causative organism Dr. Rivas urged that our minds be kept open until Koch's postulates can be filled, and he advised also that a study of sections of the lesions be made with a view to determining whether the organism is more abundant at the base or periphery of the section, and an attempt be made to find the organisms in a closed lesion. In closing, Dr. Randall said that after three injections of tartar emeric on alternate days no sign of the organisms could be found. The average time of healing under treatment is twenty days. Only one authentic case has been reported in a white man. He thinks the disease is not a venereal one, for if the organism found is causative, it is present in such numbers as to be readily transmitted, unless an intermediary host is required. Auto-inoculations have not taken.

The Cutaneous Manifestations of Syphilis (Lantern Presentation): Dr. Joseph V. Klauder showed slides of chancre, genital and extragenitally on lip, scalp and finger. Among the secondary syphilides the following forms were presented: macular, pigmentary, papulosquamous, papular (large and small follicular and rupial), large papulosquamous, fungulomas, circinate papular, large pustular and acneiform. Attention was called to the frequent confusion of the papulosquamous type with rubella, toxic erythema, urticaria, pityriasis rosea and the condition caused by copaiba. The large papulosquamous, or psoriasiform type was compared to sycosis, and the rupial syphilide bears a resemblance to impetigo. The nodular, squamous and gummatous types of tertiary lesions also were shown.

Dr. Fred Weidman, in discussion, gave certain broad, general rules in regard to diagnosis. He said that in the first stage information was not so much needed by the general practitioner. In the secondary stage there is usually present also glandular enlargement, pharyngitis, iritis or alopecia. In a generalized eruption look for it on the face. There is no itching in the white race, but this symptom is present in the colored. Three rules were laid down in regard to the tertiary stages: 1. A lesion circinate, with nodules on the periphery, a soft, pliable scar in the center and with periphery pigmented can be counted on absolutely by itself; 2. Ulcers occurring in the upper third of the leg are very apt to be spyhilitic; 3. A laboratory test should be made, taking scrapings from the part, growing in serum agar and examining for the treponema pallidum. Mary A. Hipple, Reporter.

STATE NEWS ITEMS

DEATHS

Mrs. Abbie Clifton Hersman, wife of Dr. C. C. Hersman, of Pittsburgh, died at her home on April 7th.

Mrs. Margaret C. Aaron, mother of Dr. C. J. Aaron, of Pittsburgh, died March 19th, at her home in Brownsville.

The deatu of Dr. Gordon M. Christine, of Philadelphia, occurred on April 17th. He was a graduate of the University of Pennsylvania.

Dr. William F. Lehman, Chester, died on March 3d, at the age of sixty-three years. He was graduated from Jefferson Medical College in 1883.

Dr. John J. J. Mazza, of Bangor, a graduate of the Medico-Chirurgical College, Philadelphia, in 1910, died on March 12th, at the age of thirty-three years.

Dr. Hanna Kindbom, of Philadelphia, died on March 19th. Dr. Kindbom was born in 1871 and was graduated from the Woman's Medical College of Pennsylvania in 1910.

Dr. Maurice L. Mallas, of Philadelphia, died on April 6th. Dr. Mallas was born in 1889, and was graduated from the University of Pennsylvania School of Medicine in 1918.

Dr. Jerome L. Pyle, of Glen Mills, Delaware County, died on March 23d. Dr. Pyle was born in Thornton, 65 years ago, and was graduated from Jefferson Medical College, Philadelphia, in 1885.

Dr. John S. Phillips, a member of the Allegheny County Medical Society, died March 31st, at the West Penn Hospital, Pittsburgh, of postoperative pneumonia, aged 70 years. He was born in 1851 and has been a practicing physician on the North Side, Pittsburgh, for the last 40 years, and for a number of years chief surgeon for several prominent industrial establishments. He is survived by his widow, two sons, Malcolm H. and John, of Pittsburgh; and one daughter, Mrs. James McFarland, of Monessen.

ITEMS

Born to Dr. and Mrs. Omer R. Etter, of Warrensville, a son.

Dr. Samuel B. Thomas and Miss Evelyn Bretzler, of Waynesboro, were married on March 27th.

Born to Dr. and Mrs. Gelen Castlebury, of Williamsport, a daughter, at the Williamsport Hospital.

Dr. Peter C. Reilly, of Williamsport, has been elected to the staff of the Williamsport Hospital as an obstetrician.

Dr. M. T. Milnor, of Warrensville, has returned from an extended visit with his son, Dr. Guy Milnor, of Honolulu.

Dr. and Mrs. H. Randle Kauders, of Germantown, Philadelphia, are receiving congratulations on the birth of a son, Randle Morgan Kauders, on April 1.

Dr. Margaret Warlow, of Philadelphia, a member of the staff of the Woman's Hospital, fell and received a broken ankle, while hurrying for a train in Atlantic City, recently.

Dr. H. H. Morris, professor of medicine in the Pennsylvania Medical School in China, is returning on his furlough in June to Philadelphia, where he expects to do postgraduate research work.

Reports so far received by the Pennsylvania Tuberculosis Society from local organizations show that the Christmas Seal sale in 1921 totaled $257,058.70 in Pennsylvania, exclusive of Allegheny County.

Dr. C. H. Zung, of Philadelphia, who took his master's degree in medicine from the University of Pennsylvania last year, is now assisting Dr. Morris at the Pennsylvania Medical School in China.

Dr. and Mrs. Levi Jay Hammond, of Philadelphia, have announced the engagement of their daughter, Miss Frances Hayes Hammond, and Robert C. Liggett, son of Mr. and Mrs. Craig N. Liggett, also of Philadelphia.

The Journal wishes to congratulate the firm of Edward Jacobi, which has been a consistent advertiser with us for years, on the restoration of service within 24 hours after the complete destruction of their plant by fire on February 19th.

The Radnor War Memorial will be unveiled on May 28. This stone and bronze work of art is to stand at Lancaster Pike and Iven Road, Philadelphia. Dr. R. Tait McKenzie, of the University of Pennsylvania, furnished the model for the bas-relief.

Dr. Joseph G. Steedle, of McKees Rocks, is a candidate for the Republican nomination for the Pennsylvania House of Representatives in the Twelfth District of Allegheny County. It must not be forgotten that Dr. Steedle has long and consistently, and frequently single-handedly, championed the fight for honest medicine in the Pennsylvania Legislature.

A postgraduate course of two weeks' duration will be given by the School of Medicine of the University of Pittsburgh, beginning June 1, 1922. The course is arranged entirely for the benefit of general practitioners and the number will be limited to thirty-five. The fee for the course will be fifty dollars ($50.00). Those who are interested should apply at once, and a program will be furnished. Address the Office of the Dean, School of Medicine, University of Pittsburgh.

The College of Physicians of Pittsburgh have announced their intention to institute a series of lectures, one to be given each year, on the History of Medicine. These lectures will be designated the "Bedford Lectures," in commemoration of Dr. Nathaniel Bedford, who was the first practicing physician of Pittsburgh. The first lecture of the series will be given by Dr. Clement R. Jones, Thursday, April 27, 1922. The title will be announced later, and it will have to do with the history of medicine in Pittsburgh.

A position as chief of the eye, ear, nose and throat department of the United States Veterans' Bureau in Pittsburgh is open, and it is desirable that a suitable man be found at once. The hours are from nine until five, and the salary $300 per month, or $3,600 per year. The incumbent must know the above specialties and be able to take full charge of the work. Candidates should communicate at once with Dr. B. S. Stephenson, Chief, Eye, Ear, Nose and Throat, U.S.V.B., Dist. No. 3, S. W. corner Twentieth and Arch Sts., Philadelphia, Pa.

Drs. William H. Gardner and John P. Saling, of Pittsburgh, are candidates for the Republican nomination for Congress in the Thirty-Second and Thirty-Fifth Districts of Pennsylvania. There are at present, it is reported, five physicians in Congress who have valiantly fought in the cause of reputable medicine. Why not increase the number of this gallant little group? It is probably the first time in the political annals of Allegheny County that two members of its county medical society aspired to Congress at the same time.

A testimonial dinner was tendered Dr. George E. deSchweinitz, president-elect of the American Medical Association, at the Bellevue-Stratford, Philadelphia, on the evening of April 4th, by the Philadelphia County Medical Society. The principal speakers of the evening were Dr. Ross V. Patterson, dean of Jefferson Medical College, Dr. William C. Braisted, president of the Philadelphia College of Pharmacy and Science and former Surgeon-General of the United States Navy, Dr. John G. Clark, professor of gynecology in the Medical School of the University of Pennsylvania, Dr. Edward Martin, State Commissioner of Health, Dr. deSchweinitz, and Postmaster-General Hubert Work, the present president of the American Medical Association. The meeting was presided over by Dr. J. Norman Henry, and Dr. Hobart A. Hare was toastmaster.

The Radiological Department of the Philadelphia General Hospital is now in active operation for the study, care and treatment of cancer and other neoplastic diseases. Cases may be admitted on recommendation of the family physician, or application may be made in person to the Radiological Clinic, Thirty-Fourth and Pine Streets, daily between 9 and 10 a. m.

The Department of Public Health announces the appointment of the Staff of the Radiological Department as follows: Chairman of Radiological Clinical Staff, Dr. C. C. Norris; Attending Surgeon, Dr. J. B. Carnett; Attending Gynecologist, Dr. C. C. Norris; Attending Laryngologist, Dr. Fielding O. Lewis; Attending Dermatologist, Dr. Jay F. Schamberg; Attending Radiologist, Dr. H. K. Pancoast; Attending Internist, Dr. Herman B. Allyn; Attending Oral Surgeon, Dr. Robert H. Ivy; Pathologist, Dr. E. B. Krumbhaar; Physicist, Mr. J. L. Weatherwax; Senior Assistant Medical Officer, Dr. Robert A. Bradley.

Dr. Clarence P. Franklin, of Philadelphia, who served for eleven months with the United States Army Ambulance sections in Italy during the war, recently received the Order of the Golden Crown from the Italian Government. Dr. Franklin held the rank of lieutenant colonel in the Ambulance Corps and was second in command of the Italian section. He was decorated with the Italian War Cross.

An efficiency meeting was held on Monday, March 6, 1922, at St. Joseph's Hospital, Pittsburgh, for the purpose of stimulating a better understanding between the hospital and the outside physician, not connected with the staff, practicing in the hospital, and the relationship of the hospital to its staff. The meeting was well attended. An address was made by Dr. John G. Bowman, for many years Director of the College of Surgeons, who spoke upon the newer concept of the relationship between the physician and the hospital. He also spoke of the more comprehensive realization of the duties of the staff physician towards the institution with which he is connected.

The experimental semester of the School for the Teaching of Preliminary Courses in Nursing Education was begun on February 2, 1922, at the University of Pennsylvania, Philadelphia, with an enrollment of sixty-six students from the training schools of eleven hospitals. Instruction is given at the Drexel Institute on Mondays and Tuesdays in nutrition and cookery and applied chemistry by the regular instructors of the Institute. In the Engineering Building of the University of Pennsylvania, on Wednesday, Thursday and Friday, volunteer nurse instructors, most of whom are loaned by hospitals, are teaching anatomy and physiology, elements of psychology, personal hygiene and hospital housekeeping; these subjects to be followed by elementary bacteriology, drugs and solutions, bandaging, and history of nursing including ethical and social principles. This school is being supervised by a joint committee composed of representatives appointed by the Philadelphia Hospital Superintendents' Association, the Philadelphia League of Nursing Education, the Instructors' Section of the League and the Pennsylvania State Board of Examiners for Registration of Nurses.

GENERAL NEWS ITEMS

The American Proctologic Society has issued preliminary programs of the coming meeting of the Society to be held in St. Louis, Mo., May 22 and 23, 1922. Their program states that the Profession is cordially invited to attend the public sessions, which no doubt will contain much of interest to the doctor.

The Arkansas Medical Society extends a special invitation to all former Arkansas doctors, now practicing in other states, to attend their approaching annual session which is to be held in Little Rock, May 17-19. This invitation will be especially applicable to those attending the A. M. A. meeting at St. Louis, as they can stop off at Little Rock, renew old acquaintances and resume their journey.

Dr. Hubert Work, of Pueblo, Colorado, took the oath of office as Postmaster General of the United States, succeeding W. H. Hays, on Saturday, March 4, 1922. Dr. Work graduated from the Medical School of the University of Pennsylvania in 1885 and later moved to Pueblo, Colorado, where he founded the Woodcraft Hospital for mental and nervous diseases in 1896. At the present time Dr. Work is President of the American Medical Association and was also a former president of the American Medico-Psychological Association.

The dates for the next two examinations of the National Board of Medical Examiners are as follows:

Part I and II, June 19, 20, 21, 22, and 23, 1922.

Part I and II, September 25, 26, 27, 28, and 29, 1922.

Applications for the June examination should be in the Secretary's office not later than May 15th, and for the September examinations not later than June 1st. Application blanks and circulars of information may be had by writing to the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

The Rockfeller Foundation has given six million dollars to Johns Hopkins University, Baltimore, for endowment and buildings of the School of Hygiene and Public Health. This new type of institution places emphasis upon the development of preventive medicine and upon the training of health officers. Twenty-seven states and ten foreign countries are now represented in the student body, numbering 131. The faculty of the School comprises scientists in the fields of bacteriology and immunology, sanitary engineering, chemical hygiene, physiological hygiene, medical zoölogy, epidemiology, vital statistics and public health administration. The regular courses of study lead to the degrees of Doctor of Public Health, Doctor of Science in Hygiene, and Bachelor of Science in Hygiene.

The Department of Commerce, Washington, D. C., through the Bureau of the Census, announces that there have been very few deaths from smallpox in recent years. Since the beginning of annual compilations in 1900 the highest rate from this cause in the death registration area of the United States was 6.6 per 100,000 population in 1902, while in 1903 it was 4.2 and in 1904, 2.1, since which time the rate for the registration area has never reached 1 per 100,000 population. Much higher rates in certain states and cities, however, clearly show that the danger of smallpox in an unvaccinated population must not be lost sight of. The high rate (9.2) in 1920 in Louisiana should serve as a warning. In Pennsylvania the rate is very low, being less than one-tenth of 1 per cent.

The St. Louis Meeting of the American Medical Association.—The arrangements of the St. Louis profession for the meeting places for the Session of the A. M. A., which is to be held in their city May 22-26 next, are singularly fortunate and convenient. Never has the Association been so well favored in this respect. The district in which the meeting is to take place is at the west edge of the business section of the city, easily accessible from all directions by street car or otherwise and not more than fifteen minutes' street car ride from the most distant hotel. The grouping of the meeting places is so compact that should one walk from the Registration Building (Moolah Temple) to the farthest hall it can be done in ten minutes or less; from section to section is a matter of from one to five minutes. The convenience of the location and arrangements of the different halls is more outstanding than in any other city in which the Association has met, and a decided improvement over the accomodatioins which were had at the meeting in St. Louis, 1910.

The Registration office, Post Office and Commercial Exhibits is to be in the Moolah Temple (Shrine), a beautiful and commodious building on Lindell Boulevard, two blocks west of Grand Avenue. At the other extremity of the group is the Odean, the home of the St. Louis Symphony Orchestra, with a main hall which seats better than 2,000, and several lesser halls. The main hall will be used for the opening session. Its acoustics are particularily good and suited to our purpose. The Sections on Practice of Medicine and of Diseases of Children meet here. In the assembly hall of the same building the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology will meet. (It will be noted that there has been an aim to foregather closely allied sections.) The Sheldon Memorial, a very beautiful, new hall on Washington Avenue one-half block west of Grand Avenue, which most admirably meets all requirements, will be the meeting place of the Sections on Ophthalmology, and Laryngology, Otology and Rhinology. The Section on Surgery, General and Abdominal, and on Obstetrics, Gynecology and Abdominal Surgery, will be held in the Third Baptist Church on Grand Avenue, a situation well suited to the demands. The Sections on Orthopedics and Nervous and Mental diseases will meet in the Law School of the St. Louis University, on Lindell Ave., a few steps west of Grand. The hall easily seats 500 and is both comfortable and convenient. Dermatology and Syphilis and Urology will use the large Union Methodist Church, on Delmar Avenue just west of Grand, which meets every requirement. The Sections on Gastro-Enterology, Proctoology and on Preventive Medicine will use the large hall in the Musicians' Club on Pine Street, east of Grand Avenue, and next to the building of the St. Louis Medical Society, where the House of Delegates will hold its sessions. The Section on Stomatology is assigned to the assembly hall of St. Peters Parish House, one block west of Grand on Lindell. Immediately in this district will be found three of St. Louis's most important clubs, the St. Louis, University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district and precautions have been taken to insure that normal rates continue during the meeting.

The St. Louis profession is preparing for an unusual attendance; hotel reservations are coming in rapidly but it is purposed that even the late comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as he finds it possible. Dr. M. B. Clopton, 3525 Pine St., St. Louis, is Chairman of the Committee on Sections and Section Work.

April 22d marked the passing of the last of the old independent medical weeklies—the *Medical Record.* The final issue as a separate publication appeared on that date, and announcement was made that the *Medical Record* had been sold to, and combined with, the *New York Medical Journal,* which appears semimonthly.

Throughout the fifty-six years of its service to the profession, the *Medical Record* has had the same publishers and but two editors. Dr. George F. Shrady guided its course for the first thirty-eight years and was succeeded by his assistant, Dr. Thomas L. Stedman, who has long been dean of American medical editors, and widely esteemed. The famous old firm of William Wood & Company will now devote its energies entirely to the publication of medical books in which service it has been engaged for 118 years.

It is interesting to recall that many of the most important discoveries and developments in the progress of medicine were first announced to the American profession by the *Medical Record.* These include Lister's method of antisepsis; Koch's discovery of the tubercle bacillus and that of tuberculin; the employment of cocaine in eye surgery; the Roentgen rays; the discovery of the antitoxin of tetanus and that of diphtheria; Madame Curie's discovery of radium and many others.

BOOKS RECEIVED

Eye Conservation In Industry, published by the Eye Sight Conservation Council of America, Times Building, New York City. Price 25c.

Protein Therapy and Nonspecific Resistance, by William F. Petersen, M.D., Associate in Pathology, University of Illinois, College of Medicine, Chicago, Ill. The Macmillan Company, New York, 1922. Price $4.50.

Abdominal Pain, by Prof. Dr. Norbert Ortner, Chief of the Second Medical Clinic at the University of Vienna. Authorized translation by William A. Brams, M.D. and Dr. Alfred P. Luger. Rebman Company, Herald Square Building, New York. Cloth, $5.00.

Pharmacology and Therapeutics, edited by Bernard Fantus, M.S., M.D. and Preventive Medicine, edited by Wm. A. Evans, M.S., M.D., LL.D., D.P.H. The Practical Medicine Series, Volume VI. The Year Book Publishers, Chicago. Price $1.75.

Infant Feeding, Fourth Edition, by Clifford G. Grulee, M.D., L.L.D., Associate Professor and Acting Head, Department of Pediatrics at Rush Medical College. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $4.50 net.

Neoplastic Diseases—A Treatise on Tumors, by James Ewing, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. Second Edition, Revised and Enlarged. Octavo of 1054 pages with 514 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $12.00 net.

Papers from the Mayo Foundation for Medical Education and Research and the Graduate School of Medicine of the University of Minnesota, covering the period of 1915-1920. Octavo volume of 695 pages with 203 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10.00 net.

Psychoanalysis—Its Theories and Practical Application, by A. A. Brill, Ph.B., M.D., Lecturer on Psychoanalysis and Abnormal Psychology, New York University. Third Edition, thoroughly revised. Octavo of 468 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

Clinical Electrocardiography, by Frederick A. Willius, M.D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. Octavo of 188 pages with 185 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

Consumption Cures, Cough Remedies, Etc., prepared and issued by the Propaganda Department of the Journal of the American Medical Association, Chicago. Price 30 cents.

Alcohol, Tobacco and Drug Habit Cures prepared and issued by the Propaganda Department of the Journal of the American Medical Association, Chicago. Price 15 cents.

Diseases of the Eye. A handbook of Ophthalmic Practice for Students and Practitioners. By George E. deSchweinitz, M.D., LL.D., Professor of Ophthalmology in the University of Pennsylvania. Ninth Edition reset. Octavo of 182 pages with 415 text-illustrations and 7 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10.00 net.

Basal Metabolism. Its Determination and Application. Frank B. Sanborn, M.S., Editor. 280 pages and 60 illustrations. Publishers: Sanborn Company, 1048 Commonwealth Ave., Boston, Mass. Price $6.00 net.

An Essay on Physiology of Mind, by Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia, 12mo of 150 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $1.75 net.

Clinical Tuberculosis, by Francis Marion Pottenger, A.M., M.D., LL.D., Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Volume I, Pathological Anatomy, Pathological Physiology, Diagnosis, and Prognosis, with 105 text illustrations and charts, and six plates in colors; Volume II. Complications and Treatment, with 65 text illustrations and charts, and four plates in colors. C. V. Mosby Company, St. Louis, 1922. Price $15.00.

A Laboratory Manual for Comparative Vertebrate Anatomy, by Libbie H. Hyman, Department of Zoölogy, University of Chicago. The University of Chicago Press, Chicago, Ill. Net $2.50.

BOOK REVIEWS

PAPERS FROM THE MAYO FOUNDATION for Medical Education and Research and the Graduate School of Medicine of the University of Minnesota, covering the period of 1915-1920. Octavo volume of 695 pages with 203 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, $10.00 net.

In reviewing the above book, one cannot do better than to quote the following from the preface:

"It is believed that many of the articles herein contain new material which will prove of real interest both to clinicians and investigators. Subsequent volumes will probably contain continuations of many of these studies since quite naturally in the same institutions research is apt to follow along certain lines for several years although it may be participated in by many different individuals. The clinical analysis will cover especially the clinical material most available. Thus, the volume from year to year will present detailed studies, principally by the younger members of the staff, of the clinical material available in the Mayo Clinic and in the hospitals controlled by the Medical School of the University of Minnesota. To these studies will be added the results of research work in the preclinical medical sciences from both medical departments of the Graduate School. The subject matter will be confined to the sources indicated with the occasional addition of contributions from members of the faculty on subjects which are related to those discussed by graduate students.

"The first obligation of a true university, that which makes it a university and not an aggregation of colleges, is to stimulate research, to attack unsolved problems, to train its best students to ask and to answer questions. Its second obligation is to make available the results of these investigations, the answers to these questions. The second obligation the University of Minnesota attempts to meet in this volume and in doing it to give evidence of its good faith in seeking to discharge the first in the field of medical science, for these papers summarize most of the research work by the graduate students in the medical departments of the Graduate School in the University of Minnesota during the years 1915 to 1920 inclusive. Nearly all of the papers were originally in the form of theses presented by graduate medical students in the Mayo Foundation and the Medical School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science or Doctor of Philosophy in various preclinical as well as clinical fields. The theses are published either in full or in abstract. In addition the volume contains abstracts of a few papers by graduate medical students which were not presented as theses. Some of the theses and papers have been previously published in current literature. The abstracts have been made by the authors." The contents are divided into: I, Alimentary Tract (11 papers); II, Urogenital Organs (13 papers); III, Ductless Glands (5 papers); IV, Circulatory Organs (2 papers); V, Blood (2 papers); VI, Skin and Syphilis (2 papers); VII, Nervous System (8 papers); VIII, Head, Trunk, and Extremities (11 papers); IX, Metabolism (3 papers) and X, General (8 papers). The index is divided into three parts: Index of Contributors, Bibliographical Index and Index of Subjects.

This collection of papers shows a wonderful amount of research work and in tangible form brings to the reader the far-reaching possibilities of the Mayo Foundation, showing the vision of the Mayo's.

F. C. H.

In presenting the third edition of "PSYCHOANALYSIS, ITS THEORIES AND PRACTICAL APPLICATION," published by W. B. Saunders & Co., the author, A. A. Brill, prefaces the treatise with the unqualified statement that psychoanalysis has made unprecedented progress as a therapeutic agent and an expounder and interpreter of subjects and phenomena which are not strictly medical, that its successful application to the war psychoneuroses has added many new adherents among physicians and that it has opened up new vistas in biology, psychology, bell-lettres, sociology and allied sciences. The only discordant note apparent in this symphony of attainments is the misunderstanding which the author admits exists among those who are interested in the subject, and as the basis of this difficulty is lack of understanding of psychosexual problems, he states that new material was added to the present volume that would clarify some of the specific sexual phenomena, such as masturbation and homosexuality. A chapter on paraphrenia has also been added, with new cases and illustrations, reviewing various subjects treated in the text.

The reviewers of this text in no way pretend to review psychoanalysis, a measure which undoubtedly, regardless of many controversies, has been found of value in the treatment of certain types of neuroses, but accept the task of reviewing Brill's presentation of the subject.

The text is a presentation of the Freudian theories, which indict the disturbances of the psychosexual phenomena as the exciting cause of neuroses and psychoneuroses. The proof of these theories and the practical application of the same lie within the domain of a long list of case citations, coming not only within the author's personal experience, but also those he has heard about. The text deals with psychoneuroses, psychopathology of every day life, dreams, the actual neuroses, masturbation, the compulsion neuroses, the unconscious factors in the neuroses, homosexuality, etc.

Just whether psychoanalysis is entitled to the claims advanced by the author is questionable. To say that he has failed to clarify any of the misunderstandings that exist between the psychoanalysts and that nothing materially new has been added in the chapters dealing with masturbation, homosexuality and paraphrenia seems justifiable. Furthermore, it is very doubtful if the psychiatrist or the psychoanalyst will accept the cases cited by the author as positive proof that the theories are correct or will accept the analysis made by him of the individual cases. The volume as a whole demonstrates a commendable enthusiasm on the part of the author and it is regrettable that he has allowed his enthusiasm to overshadow the scholarly manner of presentation to which all medical subjects are entitled. For example, in many chapters he fails, after stating Freudian theories, to reason from that point, but injects his own views, which is somewhat confusing. Furthermore, at times he unpardonly digresses at length and his method of case presentation is somewhat long and tiresome to the reader. It is also questionable whether some of the citations will materially increase the sympathetic interest in the Freudian theories, as expressed in the author's preface, or the ridicule that they invite will tend to hamper the acceptance of such a measure as psychoanalysis. However, the text no doubt will be accepted by the medical profession as a treatise on the subjects, but the reviewers hope that it will not find its way into the hands of the rank and file of the laity, by whom it would be regarded as erotic reading.

J. A. J. and H. V. P.

McGRATH'S OPERATIVE SURGERY, F. A. Davis & Company, Publishers, 1921.

This book, which is now in its 6th Revised Edition, is strictly on operative surgery. It consists of 369 illustrations with full page color and half tone. From an anatomical standpoint the book is well written, helping to make plain many of the perplexing problems which will confront the student and operator alike.

The anatomy of the head and face, including the brain with the localization points, is very well written, while the operations involving these areas are well illustrated and clearly written.

The work on cleft palate and congenital deformities of the lip is very commendable. The embryology of the congenital deformities of the lips is a worthy addition to the book and is as complete as will be found outside of a textbook on this subject. There is perhaps a lack of balance in devoting 170 pages to surgery and anatomy of the head and face, taking up such specialized surgery as the brain, mastoid and sinuses while the pelvis goes by without mention, although the urinary system has 55 pages while surgery of the breast has only six pages. Nine pages are devoted to the heart as opposed to six in the respiratory system and no mention is made of the newer methods of treating empyema.

The work on the abdomen is a commendable one from an anatomical and surgical standpoint. The illustrations are very good in this section, picturing the different stages in the operation on the viscera. The liver and gall bladder are treated in a very able manner, the anatomy being well brought out. The section on rectal surgery deserves attention.

In the treatment of inguinal herniae the author depicts the Halstead operation as transplanting the cord. This operation was published many years ago, but the operation Dr. Halstead has been doing for years does not disturb the cord from its bed (J. H. H. Reports Vol. VII). In dealing with the upper and lower extremities the anatomy is well brought out and every conceivable amputation is pictured.

Considering the book from the standpoint of an anatomy it is very complete and comprehensive, going into detail in several parts which evidently especially interest the author. Under anesthesia the author deals with every conceivable form of anesthesia and has a brief account of Dr. Crile's anoci association, but earlier gives only passing mention of nitrous oxide-oxygen anesthesia, stating that nitrous oxide should not be used in pregnancy and that it is good for only short operations. It would seem that gas is fast becoming the favorite for delivery anesthesia.

Touching on blood transfusion, he goes to great length in discussing the direct arteriovenous anastomosis by suture method, and barely touches the sodium citrate method or the Kempton Brown technique. Perhaps it would have been well even in an operative surgery to have emphasized the necessity of correct matching and grouping the blood of donor and recipient.

On the whole the book is well written and has many commendable features which should appeal to the students and practitioners, making for itself a place among the surgical text books of the time.

E. H. A.

THE PRACTICAL MEDICINE SERIES, Volume 3, 1921. Chicago: The Year Book Publishers.

After a perusal of this handy volume which deals with the specialties, Eye, Ear, Nose and Throat, one quite naturally agrees with the senior editor, Dr. Casey A. Wood, as to the influence of the Great War on the literature from which this work is compiled.

Intended, apparently, for the general practitioner, it proves a ready reference to the varied number of conditions requiring the broad experience of the specialist, and the fullest coöperation on the part of the family physician. This cannot help but impress him with the necessity for such collateral reading as is here provided in short, terse articles from which unnecessary detail was of necessity eliminated, so that in a small volume of less than 400 pages, an abstract of the writings of 270 authors was made possible.

G. H. C.

SUBMUCOUS RESECTION OF THE NASAL SEPTUM, by William Middaugh Dunning, M.D., Consulting Otologist, Fordham Hospital, N. Y. C.; Consulting Otologist, Manhattan State Hospital, N. Y., etc. New York: Surgery Publishing Co., 1921.

In this monograph the beginner will find instruction and encouragement and the more experienced operator many practical points which will be helpful in overcoming difficulties to be met in performing this operation. Description of the normal, as well as the distorted anatomy of the parts which makes this operative procedure necessary, is dealt with in a thorough manner.

Since each case requiring this operation presents its own individual problem the surgeon will find in this book a wealth of detail which will be of great service.

J. F. C.

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ORIGINAL ARTICLES

SURGICAL TREATMENT OF CANCER OF THE LARGE INTESTINE*

GEORGE W. CRILE, M.D.

CLEVELAND, OHIO

A consideration of the surgical treatment of cancer of the large intestines centers about the following outstanding problems: 1. If the cancer is accessible, shall radium be used before or after operation? If so, how long after? 2. Shall the operation be done in two stages or completed in a single stage? 3. What incision shall be made through the abdominal wall? 4. How shall infection and toxemia be controlled?

Shall radium be used, and if so, when? If radium is used in sufficient dosage to affect the cancer cells which lie beyond the farthest point which can be reached surgically, it may cause perforation. Radium perforations of the bladder or intestines are all but incurable by operation. If the radium affects only the tissue that the surgeon will remove, its use scarcely seems worth while. We have used radium before operation—both immediately before and ten days before, but as yet we are not prepared to reach a conclusion as to the value of its use as a preoperative measure.

As for the postoperative employment of radium; in one of our cases perforation followed its use immediately after operation. Fortunately in this case we successfully closed the perforation; but this event has led us to the decision that radium should not be employed until some days after operation.

Shall the operation be performed in one or two stages? After several trials of each method, we have adopted the two-stage operation for all cases. For cancer of the rectum, a Littlewood type of colostomy, that is, a high intermuscular opening is made. The hand is inserted for exploration before bringing up the loop of intestine, underneath which a glass rod is inserted so as completely to divert the fecal stream. The loop is opened in from three to five days. If the cancer is in the sigmoid, the splenic flexure, or the transverse colon, a cecostomy is made. If it is in the cecum or ascending colon, a preliminary anastomosis is made between the ileum and the transverse colon.

The interval between the preliminary operation and the major operation is not fixed, for the major operation is performed according to the indications, both of the general state of the patient and of the local condition.

In general the advantages of the two-stage operation seem to be two: (1) There is a diminished chance of intra-intestinal pressure with its evil consequences of increased toxemia, diminished resistance to infection, loss of nourishment, and interference with local repair; and (2) the blow is divided, so that the favorable conditions established by the preliminary operation make possible a more radical operation with the greater probability of a permanent cure. In the radical operation we always close each end of the divided intestine with silk, using a cobbler's stitch, overlaid by a row of single right-angled stitches. We make an end-to-end, a side-to-side, or an end-to-side anastomosis according to opportunity.

What is the best incision through the abdominal wall? The incision through the abdominal wall is made without regard to the direction or the structures divided; the best exposure in the individual case is the only criterion. For example, if the splenic flexure is involved, a long incision is made parallel with the free border of the ribs; if the hepatic flexure, the incision is parallel to the ribs on that side; if the sigmoid or cecum, an extensive curved incision is made with the bow outward; if the growth is high in the rectum, the Kraske incision is chosen; if in the anal region, an entirely local incision is made.

How shall infection and toxemia be controlled? The control of infection and toxemia is promoted by conserving the bodily vigor as far as possible and by increasing the local defense. In feeble patients, the general bodily vigor is promoted (1) by the transfusion of blood, before as well as after the operation; (2) by maintaining the water equilibrium by the hypodermic infusion of from 3,000-4,000 cc. of normal saline to which novocain is added to make a 1/32 per cent solution according to Bartlett's method; (3) by not permitting any tissue but peritoneum to be in apposition, that is, all raw infected tissue is covered with well wrung-out iodoform gauze, which is left in position for five or more days. After the Kraske operation, when the gauze is removed, the "doglick" principle is employed—frequent dressing and irrigation, Sitz baths, etc.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

For example, when the splenic flexure has been resected and the local lymphatics removed, the entire raw area is covered with a single layer of iodoform gauze. All raw tissue is always protected until the local defense is established. By the absolute prevention of pooling of wound secretion and by separating every atom of raw tissue from adjacent raw tissue by means of a single layer of iodoform gauze, contamination is prevented from becoming infection. In many cases the secondary closure may be made within a few days. It is true that gauze thus used interferes somewhat with the repair of the divided intestine, but life is preserved and the resultant fistulæ are transient. A blood transfusion is made and repeated whenever there is the slightest hint of oncoming depression. As for toxemia, the two-stage operation in itself provides the principal means of prevention.

An especial point may be made with reference to the final disposition of the colon in the Kraske operation. In some cases, a successful end-to-end closure may be made, provided only that contamination is prevented from becoming infection by making certain that no raw tissue is in apposition with other raw tissue. In addition the sequence of iodoform and Dakin's solution is used, and much moist heat is applied locally.

Of special importance in the conservation of the general bodily vigor is the choice of the anesthetic. We are in agreement with Bevan that ether and chloroform are contraindicated. During the past year we have performed practically all our operations under nitrous oxid analgesia and local anesthesia. This combination has a truly remarkable protective effect, for analgesia is a specific preventive of fear, worry and anxiety, and in addition provides a state of pleasant exaltation. Under analgesia, the patient experiences no sense of fear of the operation such as may occur under local anesthesia alone, while the comprehensive use of local or caudal anesthesia gives freedom from rigidity.

We are in complete accord with Dr. W. J. Mayo in regard to the need of abundant exposure of the field and a wide and radical operation.

It may be added that at each step in the treatment we are guided by the statistical probability, rather than the indication in the individual patient. That is, we use the two-stage operation in every case because of the statistical probability that a one-stage operation would mean the infliction of too much trauma in one blow. We use a protective iodoform gauze dressing in every case because of the statistical probability that contamination may develop into a serious infection. We use blood transfusion and large quantities of water in every case because of the statistical probability that the cells of the vital organs, notably—the myocardium, the nervous system and the liver—will suffer from want of oxygen and water. We avoid ether in every case because of the statistical probability that the organism will not endure so great an interference with the internal respiration; since to the extent that ether and chloroform interefere with the permeability of the semi-permeable membranes, to that extent they interfere with the internal respiration. In other words, to that extent they suffocate the cells.

We call the complex and intricate process by which wounds are kept free from infection "asepsis." By analogy, we call the intricate and complex precautions against interfering with the internal respiration of the cells of the vital organs, that is to say, the various means by which the bodily energy is preserved, "anociation." Asepsis and anociation go hand in hand; each reinforces the other, and in no other surgical field except in exophthalmic goiter do asepsis and anociation yield such beneficent results as in the treatment of cancer of the large intestine.

Our total series includes 205 operations for carcinoma of the rectum, 102 of which were radical operations. Among these 65, including 45 radical operations, have been performed under the plan of management described above. In this final series there was one death during the period of convalescence in the hospital. The immediate cause of death in this case was bronchial pneumonia. The patient's wound had healed and convalescence from the operation was practically complete, when he succumbed to influenzal infection.

SUMMARY

The mortality rate for resection of the large intestine for carcinoma, which has ranged from 15 to 45 per cent, has been reduced to 2 plus per cent, and cases hitherto considered inoperable have been brought within the range of operability.

RADICAL OPERATIONS FOR CANCER OF THE RECTUM

I. STATISTICS COLLECTED BY VARIOUS REPORTERS

Reporter	*Date of Report*	*Number*	*Mortality Per Cent*
Tuttle (Table I)	To 1885	487	22.4
Tuttle (Table II)	1885–1892	512	20.0

Reporter	*Date of Report*	*Mortality*	
		Number	*Per Cent*
Tuttle (Table III)	1892–1897	259	11.7
Ball	1896	175	16.5
Billroth	1896	608	53.0
Gross	1896	193	20.0
Kelsey	1896	140	15.7
MacCosh	1896	439	19.1
Veljaminoff	1896	335	20.5
Krönlein	1900	881	19.4
Hartwell (group of N. Y. surgeons)	1905	46	20.0
Chalier and Perrin	1913	208	40.86
Hartman	1913	1,665	15.8
J. M. Lynch	1918	335	16.0
II. INDIVIDUAL STATISTICS			
Kraske	1892	80	18.7
Poppert	1906	63	6.3
Rotter	1906	42	4.8
Cripps	1907	85	4.7
C. H. Mayo (Mayo Clinic)	1916	430	15.5
C. H. Mayo (Mayo Clinic)	1916	(1913–1915)	12.5
Bull	1919	44	11.4
G. W. Crile and associates to October 1st	1921	102	7.8
G. W. Crile (personal, last series) to October 1st	1921	44	2.2
III. TOTAL SERIES OF OPERATIONS FOR CARCINOMA OF THE RECTUM, INCLUDING COLOSTOMIES FOR OBSTRUCTION			
G. W. Crile and associates to October 1st	1921	204	10.3
G. W. Crile (personal, last series) to October 1st	1921	65	1.5

FOLLOW UP REPORT

SEVENTEEN CASES OF LAST SERIES HEARD FROM

Dead	*Living*
4 years after operation—colostomy	6 years, 5 mos.—radical
2 years, 4 mos. after operation—colostomy	6 years, 3 mos.—radical
1 year, 2 mos. after operation—colostomy	5 years, 9 mos.—radical
1 year, 8 mos. after operation—radical	1 year—radical
3 mos. after operation—colostomy	1 year, 2 mos.—radical
2 mos. after operation—colostomy	2 years—radical
1 date not known—colostomy	5 mos.—radical
	1 year—radical
	3 mos.—radical
	1 mo.—radical

DISCUSSION

Dr. Damon B. Pfeiffer (Philadelphia): It is indeed an honor and a pleasure to discuss this paper; an honor because of the eminence of the author, and the wonderful results he is able to record, and a pleasure because my experience and observation accord almost entirely with the principles that he has enunciated, and in those respects in which agreement hesitates, the cogency of his argument half convinces.

We must acknowledge that it will require considerable education to bring the two-stage operation into general use. It is not a pleasant thing to be operated on once, and it is even less agreeable to contemplate a second operation. That is the layman's standpoint. Even the charms of anoci-association will hardly relieve it of this onus. As a matter of fact the two-stage operation for cancer of the large intestine is a monument to failure; failure in the first place, if we may say it without irreverence, on the part of Providence which has ordained that the disease should begin and progress to a considerable extent without giving notice of its presence. The observation of Aristotle still holds that "in the matter of habits as with disease, we are master only of the beginnings." The second common failure is on the part of the patient who neglects to seek competent advice at the first manifestation of trouble; and in the third place (let us admit it for our souls' sake), failure too often is seen in the neglect of the physician first consulted to attach sufficient importance to the complaints and institute the searching investigation which should lead to a clean-cut diagnosis and the salutary treatment. If all these things could be ordered otherwise, a one-stage operation could safely be done and would answer all requirements. We should still try to approximate these ideal conditions; but in dealing with affairs as we now find them, and are likely to find them for an indefinite period to come, the conclusion is irresistibly forced upon us by the literature, by experience and by such results as here reported by Dr. Crile, that the one-stage operation is far more dangerous than one conducted in two or occasionally more stages.

The truth of the matter is that operation for carcinoma of the large intestine is not usually a difficult technical proposition. The experienced abdominal surgeon can carry it out with little difficulty. The mortality does not attach to the operation, but to other factors. It is not hemorrhage, it is not shock which furnish the primary mortality, but it is the other factors of which Dr. Crile has spoken, particularly obstruction or infection, or a combination of both. It is worthy of note that there is a type of physio-pathological obstruction in these cases. Even before the lumen of the bowel has become sufficiently narrowed to cause mechanical obstruction, there is marked stasis, and at times impaction, behind the site of growth. Under these circumstances a clean field of operation is unattainable. A certain definite mortality will result from unavoidable contamination in making an immediate anastomosis. If the patient avoids this danger it is still necessary that intestinal function be resumed before union between the anastomosed segments becomes secure. Thus leakage occurs and a second formidable cause of mortality is added. I take it for granted that no surgeon of experience would attempt immediate resection and anastomosis in the presence of actual obstruction. As Moynihan remarks, there is probably no rule more binding on the abdominal surgeon than this. Our plea is joined to that of Dr. Crile to extend the application of this rule, making it apply to what we have spoken of as physio-pathological obstruction, in which the normal physiological action of the bowel is perverted by the pathological process even before the mechanical factors begin to operate.

The two great advantages of the two-stage operation are that by its use one may control both obstruction and infection. The striking reduction in mortality which results is sufficient answer to any lesser objections that may be made against it. It is time for the profession to adopt this plan as the preferred and standardized method of treatment. Sidestepping and attempts at individualization may at times yield brilliant successes, but they will not compensate for disappointments that mean mortality.

Dr. Harold L. Foss (Danville): Down in the basement of the Lakeside Hospital, hidden away in remote corners that are reached only after a considerable walk through subterranean passages, one may find many laboratories equipped with magical apparatus of every description and presided over by physiologists, chemists and physicians of great skill, all of whom have been working there under the direction of the man to whose address we have just listened. In these laboratories researches have been conducted for many years on innumerable problems relating to medicine and from which most valuable data have been contributed, especially on the subjects of shock, blood transfusion and nitrous oxide anesthesia. The chief result of all these has been, especially, the development of methods that have effected a marked reduction in surgical mortality.

We all know of Dr. Crile and his work and he honors us in being present here to-day. Personally, I think he represents the best type of American surgeon, the best type as against the typical Prussian surgeon, for example. His surgery is the antithesis of the surgery we used to see in Germany and Austria; for those of us who have witnessed surgical procedures in the great clinics of Berlin and Vienna know that although these operations were often characterized by brilliancy, they were as often examples of brutality. On the other hand, the operations performed in the Lakeside Clinic are proverbially noted for the technical finish and finesse with which they are performed.

A few months ago it was my privilege to visit Dr. Crile in his Cleveland Clinic and home. I was interested in the thyroid, in the treatment of its diseases, and in the reduction of mortality attendant upon surgical operations performed upon the gland. I remember that, when working with Dr. Charles Mayo six or seven years ago, our mortality in thyroidectomies was about 4%. My own mortality in my first series of cases was approximately that figure. I was dissatisfied and so went to Cleveland, where for a week it was my priceless privilege to watch Dr. Crile in the operating room, and in the evening to sit at his fireside and hear him elucidate some of his theories. From somewhat of a skeptic when I went to Cleveland, I came back very much of a disciple. The principles involved in his ideas were extremely simple, were easily applied, and the results they produced were quite startling. Dr. Crile teaches us not only to treat the patient postoperatively, but emphasizes the importance of combating, in anticipation, shock and acidosis; in other words, of having out a sheet anchor or two well before the arrival of the storm.

Prevention of dehydration of the patient, preoperative treatment of a possible acidosis, nitrous oxide and oxygen anesthesia combined with local anesthetic in place of deep anesthesia with ether, are important details in his plan of treatment. I believe the young men who are now taking up the study of medicine and on whom will rest the responsibility of performing the surgery of the next generation will remember much of what Crile has taught in this generation; that his influence in the development of medical science will be felt more and more as time goes on, and that when the history of American surgery of the past fifty years is written there will be no more brilliant chapters than those containing the record of the scientific contributions made by George W. Crile.

Dr. Crile (in closing): I rise only to express my very deep sense of appreciation of the most courteous discussions of my friends, Drs. Pfeiffer and Foss, both of whom described my method better than I did myself. When men like Dr. Foss and Dr. Pfeiffer say they will take up the work that we have but started it means that a more perfect instrument of protection will be evolved by this generation. Mr. Chairman, I wish again to thank you and the audience for listening to me so patiently to-day.

THE PRACTITIONER'S PART IN ACQUIRING THE KNOWLEDGE NECESSARY FOR THE INTELLIGENT INTERPRETATION OF ATYPICAL WASSERMANN REACTIONS*†

SAMUEL R. HAYTHORN, M.D.

PITTSBURGH

The place of the positive Wassermann test in the diagnosis and control of the treatment of syphilis is now firmly established. The clinical evidences of the disease and the results of the test agree in the great majority of instances. However, there remain a certain number of disagreements for which no entirely satisfactory explanation has been found, namely: there are instances of typical clinical syphilis in which the reaction is negative or in which only a partially positive test can be obtained; and there are conditions, definitely not associated with syphilis, in which a positive or partially positive test may appear. It is with the hope of throwing some light upon the contradictory results, and more particularly upon the partially positive or "atypically" positive tests, that this paper is offered.

If the Wassermann test is atypical in any given instance, the fault or change which is responsible for the discrepancy must lie in one of three places: (a) the technic of the test, (b) the manner and time of collection, (c) within the serum itself as influenced by conditions in the patient's body.

(a) *The influence of the technic on the number and type of atypical reactions:* In the beginning the laboratory was looked to for the development of a "perfect," never-failing technic, which would eliminate all variances and atypical reactions and serve as a court of last appeal in all questions of syphilitic infection. Innumerable modifications were developed, ranging from the most veritable abortions to needlessly long and circuitous methods. Most of these methods are now disused, but a certain few inferior technics have survived, because they are not too loose to miss the positive tests in patients whose bloods are saturated with Wassermann positive substances. Unfortunately no small per cent of atypical tests are due to the use of such methods.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

†From the William H. Singer Memorial Research Laboratories.

The most promising outcome of all of the technical investigations has not been the development of a "fool-proof Wassermann," but has been the demonstration that the test is first of all a quantitative one and that any technic which fails to bring out the relative amounts of Wassermann positive substances in a given serum fails to qualify as an efficient method. It is now apparent that the more sensitive we make the system, the more accurately we titrate the various reagents and the more carefully we measure the amounts of the patient's serum used, the more we increase, rather than decrease, the number of partially positive or atypically positive tests. Perhaps the day will come when a "perfect test" will be found, but the indications at present are that the technic has already advanced far beyond the point of the knowledge necessary to the most intelligent interpretation of its meaning.

(b) *The influence of the manner and time of collection:* It is not likely that a positive test can be made negative or vice versa by the way in which it is collected, but close attention to the following precautionary measures will prevent many samples from becoming anticomplementary and thus clouding the reading: Use clean, sterile syringes and containers, free from water, antiseptics or other foreign material, for the collection of the blood. The presence of even very small quantities of water, alcohol or antiseptics may start hemolysis and interfere with a clear reading. Samples collected in potassium oxalate for blood sugar estimation and halved for a Wassermann test are usually anticomplementary.

Collect the blood when the patient's stomach is empty, preferably before meals or two or three hours after them. Do not take the blood within forty-eight hours after a general anesthetic or an alcoholic debauch.

Collect the blood within twenty-four hours of the test. I have known weakly positive tests to become negative on repetition, after a week in the refrigerator.

(c) *The influence of physiological and pathological conditions on the serum:* Given a highly sensitive quantitative system and a carefully collected sample, the deviations from the typical reaction, as shown by that system, must be the result of changes either physiological or pathological which have affected the patient's serum. In addition to anesthetics and acute alcoholism, we know that fevers and sometimes pregnancy will confuse the expected result, and that thorough treatment generally changes positive tests to partially positive and finally to negative ones. The lapse of many years may do the same thing, and we have some data which indicates that the development of the Wassermann positive bodies is gradual enough to show partially positive stages in the reaction.

There are undoubtedly many other changes which influence the test and the only hope of determining them and their relative importance is through the thorough study of carefully compiled and correlated laboratory and clinical data.

Several years ago we adopted a standard Wassermann technic at the Singer Memorial Laboratory, and about July 1st of this year we undertook a review of our records. Something over eight thousand tests had been made since the adoption of the technic, but because of some confusion in the symbols used in the earlier tests, only the last seven thousand "completed tests" were taken into consideration.

Synopsis of technic and method of reading: The antisheep system was used. An attempt was made to absorb the natural antisheep amboceptor, and a tube was set up in each series to determine whether any of it had persisted. At least two carefully titrated antigens were used in each test, and in many of them Neymann's antigen was also included. The two standard antigens were: (a) the cholesterinized alcoholic extract of human heart and (b) the acetone insoluble fraction of the alcoholic extract of beef heart. 0.2 c.c. of patient's serum and 0.4 c.c. of spinal fluid were used routinely, and occasionally graded tests with larger quantities were done.

The tests were recorded with reference to the relative amounts of fixation of the two standard antigens. The cholesterinized antigen was much the more sensitive, and when a series of tests were made on the same patient, for the purpose of controlling treatment, fixation persisted with it long after complete hemolysis had become a constant finding in the tube containing acetone insoluble antigen. On this basis reactions were recorded as:

Four-plus (++++),	when complete fixation occurred with both antigens.
Three-plus (+++),	when cholesterinized antigen was completely fixed, and hemolysis with acetone insoluble antigen was less than one-half.
Two-plus (++),	when cholesterinized antigen was completely fixed and hemolysis of acetone insoluble antigen more than one-half.
One-plus (+),	when cholesterinized antigen was only partially fixed, but was not more than one-half hemolyzed.
Negative,	when neither antigen was fixed, or when there was more than one-half hemolysis with the cholesterinized antigen. Such inhibitions were always recorded.

The table shows the gross results of the analysis:

Negative reactions	5,802	or 82.9%
Four-plus reactions	794	or 11.3%
Partial-plus reactions	404	or 5.8%
Total (completed tests)	7,000	
Anticomplementary reactions	74	
	7,074	

Most of the tests were made as a part of the routine examination of the patients of the Allegheny General Hospital, and all but 613 of the specimens were accompanied by histories. The revised table shows:

All specimens without histories	613
Number of negative tests, with histories	5,287
Four-plus positive tests, with histories	729
Three-plus positive tests, with histories	118
Two-plus positive tests, with histories	227
One-plus positive tests, with histories	26
	7,000

It is not within the scope of this paper to go into the figures too extensively but simply to point out some of the unusual findings and to state the data with reference to the conditions in which atypically positive tests were obtained.

Doubtfully specific four-plus tests: Contradictory four-plus positive tests were recorded three times in acute pneumonia, twice in typhoid fever and once each in chorea and acute arthritis. In each of these instances the patient's blood was reëxamined during convalencence and all were negative. None of them were demonstrably syphilitic.

There were eight instances of four-plus reactions on the bloods of pregnant women, who presented no evidences of syphilis. They were all near term. One returned one month after delivery for a repetition of the test. It was negative as were also those on the bloods of her husband and child.

The occurrence of the partially positive tests is best summarized as follows:

	(+++)	(++)	(+)
Syphilis denied, symptoms obscure blood	7	18	8
Syphilis denied, symptoms obscure, spinal fluid	0	5	0
Syphilis denied, clinically probable, blood	19	37	0
Unquestioned syphilis (untreated), blood	23	76	0
Unquestioned syphilis (untreated), spinal fluid	8	9	1
Unquestioned syphilis (arsphenamine treated), blood	51	69	9
Unquestioned syphilis (arsphenamine treated), spinal fluid	10	13	8
	118	227	26

It is obvious from the table that most of the tests occurred in proved syphilitic infections. The greater number were repeated tests on the same patient as he underwent treatment. Many such series of tests began with four-plus positive reactions, and became three-plus, two-plus and negative in turn. The table fails to show some of the most interesting features, as for instance, the relationship between blood and spinal fluid tests in cerebrospinal lues. Partially positive blood tests were relatively common in these conditions and in one instance of general paresis the patient's spinal fluid varied from four-plus to negative during eight Swift-Ellis treatments, while his blood remained constant at two-plus.

Results of this kind were common enough to suggest the need of a thorough examination of the nervous system, provided no other explanation appeared for the occurrence of a two-plus test.

The age element is apparently another important factor. When the infection has occurred early and the disease remained latent for years the partially positive test is rather to be expected than not. Two two-plus tests were obtained on late malignant cases, but it was impossible entirely to exclude a previous leutic infection in either case. No partially positive reactions were found in tuberculosis where possibility of syphilis could be excluded. In short, the finding of a two- or three-plus positive test appeared to be little if any more fallacious than that of the four-plus test. Yet it would seem advisable to have the test repeated in every case of doubt.

SUMMARY

A correlative review of the clinical and laboratory records of 6,387 Wassermann tests made under as nearly constant conditions as possible, indicates that the partially positive or atypically positive test has a place of distinct value in the diagnosis and the control of the treatment of syphilis. Particularly important are the tests of two- and three-plus types, when the same result is obtained on repetition. Treatment appears to be the principle factor in the alteration of the intensity of the reaction. The blood findings in neurosyphilis and the lapse of time during latent stages of syphilis are also important considerations. Additional data is needed to interpret such readings, and this can best be gained by thorough coöperation between the physician and the serologist.

It would seem, therefore, that it is the duty of the progressive physician to accept his share of the responsibility for improving the Wassermann situation, which we believe he can accomplish by:

1. Insisting upon quantitative Wassermann tests.

2. Collecting blood specimens at times when the patient is in as nearly normal a state as possible, save, of course, for the conditions which indicate the need of the Wassermann test.

3. Supplying the laboratory, by number if not by name, with the data in the patient's history bearing on syphilis (or the absence of it), and noting the number and kind of treatment, etc. No honest laboratory will misuse the information and the physician soon learns to detect and avoid the other kind.

4. Consulting with the serologist when the tests are confusing or contradictory, thus jointly seeking an explanation of the findings.

5. Requiring a repetition of the test in doubtful cases.

DISCUSSION

Dr. John A. Kolmer (Philadelphia): The paper by Dr. Haythorn discusses a very timely subject, because there is no modern laboratory test the subject of more controversy between the clinician and the laboratorian than the Wassermann reaction. This is particularly true of patients whose sera yield weakly positive or doubtful reactions. The reasons for these controversies are mainly two: First, the difficulty of accurate diagnosis of many cases of syphilis in the latent stages; and second, the possibility of error on the part of the serologist.

Dr. Haythorn has covered in a very commendable manner some of the sources of error in the test. The difficulty of interpretation of the weakly positive and unexpectedly positive Wassermann remain the most difficult for the clinician, but I am of the opinion that if the Wassermann test is properly conducted the clinician should not disregard these reactions. I believe that when the technical conditions are correct the burden of proof is on the clinician to show that there is not syphilis in that particular individual.

Faith in the Wassermann reaction on the part of the clinician has been somewhat undermined by reports of discrepant results when portions of the same blood have been sent to different laboratories. These results are not by any means unexpected by the laboratory worker under present conditions, because the Wassermann test is performed by so many different methods, and particularly one element of the test, the antigen, varies considerably in different laboratories. These reports are, however, the basis of a demand for the standardization of the test.

Briefly, I may summarize my own views by stating that the Wassermann test is not too delicate; rather, it is not delicate enough, and the aim of the serologist to-day should be to increase the sensitiveness of the Wassermann reaction while maintaining its practical specificity. With this idea in mind I started several years ago thoroughly to study the Wassermann test from every possible phase and angle, for the purpose of increasing its sensitiveness, its specificity and its practical diagnostic value, with the hope that this work would evolve into a standardized test. After between five and six years of continuous work we believe that a new technic has been evolved, which we hope will fulfill these requirements and increase the practical value of the Wassermann test for the practicing physician.

Dr. Judson Daland (Philadelphia): I desire to congratulate Dr. Haythorn upon this paper showing the practitioner's side of the question. He has pointed out some of the errors that have to do with the technic of gathering the blood, and also some of the errors that have to do with handling the test in the laboratory. I desire to call attention to one important thing in regard to errors that have to do with the serum of the blood in nonsyphilitics giving a four-plus or three-plus Wassermann. Dr. Haythorn pointed out that in certain febrile conditions a positive Wassermann reaction may occur where no syphilis exists. It seems to me one must almost always hold in abeyance any opinion as to the value of the Wassermann reaction when fever is present, or when there is any marked alteration in metabolism, as for instance in glycosuria, or in pregnancies with lactosuria.

Metabolic changes, in connection with uremia and intestinal toxemia, are apt to be overlooked in interpreting the meaning of a positive Wassermann. Some years ago, in a paper published upon this subject I reported a case of severe uremia and intestinal toxemia in which a four-plus Wassermann was observed, which in the course of a few weeks under treatment was replaced by a negative Wassermann. It is evident that one may easily be led into a diagnostic error, and therefore, in all doubtful cases one's opinion should be withheld until this temporary condition of the body has been removed.

Dr. John M. Higgins (Sayre): I would like to ask Dr. Haythorn two questions: first, as to the value of Wassermann reactions taken upon the placental blood; and second, as to what changes in reaction might be expected in Wassermanns upon the mother during the first two weeks after delivery.

Dr. Haythorn (in closing): I want to thank Dr. Kolmer for his excellent discussion, touching upon many things which I omitted. I think much depends upon the antigen and that we will finally adopt a standard method. It is a curious thing, but if we repeatedly make antigens exactly the same way, we do not always get the same product. The only safe way perhaps is to titrate our antigens so that they are as nearly comparable as possible to the good ones we have had before. When we get a reliable method of making antigen the other parts of standardization will fall in line and everything will become more reliable.

I want to thank Dr. Daland for his suggestion on intestinal toxemia.

In answer to Dr. Higgins' questions, I have not had much experience on placental bloods. If the mother is under an anesthetic at the time she is delivered and has the blood drawn out of the cord and placenta, I should not feel that the test was particularly reliable. About the reliability of Wassermann tests taken within two weeks after delivery I cannot say anything either, because we always wait at least thirty days to take such tests. It would be nice to have a series of such cases—that is the only answer, you know—and we do not have it.

The Wassermann reaction in syphilis we must consider only as a symptom; but when all is said and done I think it is the most reliable single symptom we have of the disease.

CYTOLOGY OF THE CEREBROSPINAL FLUID*

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In suspected organic disease of the central nervous system, a careful examination of the cerebrospinal fluid offers the best chance of discovering whether such organic disease really exists or not; and if so, this examination is our most certain means of determining its exact nature.

I believe it is generally understood that the only cell normally found in the cerebrospinal fluid is the small lymphocyte. This cell is found in number anywhere from none or one up to six or eight, according to various opinions. One may begin to be suspicious, I think, when the number of cells reaches ten or twelve. In my own experience, I have not found more than six cells in cases which proved to be normal by all tests, laboratory and clinical.

The examination of the cerebrospinal fluid begins with the puncture, and includes observations on the pressure, color, degree of clearness or cloudiness, cytology, bacteriology, estimation of sugar, globulin and albumin, Wassermann test and gold sol. test. Of these examinations I expect to speak only of the examination of the cells both as to number and kind, not because it is the only thing of importance, but because it seems to me to be the one examination that nearly always gives a good deal of information.

I suppose it has been the misfortune of many internists here to have made lumbar punctures upon patients suspected to have organic nervous disease, who were actually suffering from some acute febrile disease, with symptoms suggestive of meningitis. I have been interested in the findings in such cases for the past eleven years, and have had an opportunity to observe quite a number of them. In my own experience there has been no increase in the cell count, nor variation from the lymphocyte normally found, in such diseases as measles, typhoid fever, pneumonia, sinusitis and influenza. Where changes were found in the cells, an actual infection has been demonstrated either by bacteriological examinations, the Wassermann test, or the clinical course of the disease, coupled with further laboratory studies.

A very important point in the examination of the fluid is the observance of a proper technique. In making the puncture one should pay scrupulous attention to such small details as getting the patient in the best possible position, selection of a good sharp needle of small calibre and the exercise of a good deal of patience. These points are important because of the danger of bleeding from the puncture. In case there is hemorrhage in spite of all precautions and care, the cell count is not nearly so reliable as if one obtains a clear fluid without any red blood cells, or at any rate a fluid clear or cloudy, as the case may be, without red blood cells.

Of course, the number of cells may be estimated by comparing the number of red blood cells with the white blood cells, both in the blood and in the spinal fluid, but I am not sure that such estimations are very reliable, even after continuous and painstaking work. Another important point in the count is the use of a good stain—such as polychrome methylene blue, crystal violet, or methyl violet—to differentiate the white cells from the reds, and mononuclears from the polynuclears. I am aware that many laboratory workers make cell counts without staining, but it seems to me that it should be done only by pathologists of exceptional training and skill, because of the great importance of accuracy, and the equally great liability of making mistakes.

In all forms of irritation and infection of the meninges and parenchyma of the central nervous system, the cell count is important and gives valuable information. In acute meningitis of any type whatever the absolute number is increased early in the disease and the count rapidly increases as the disease progresses. Thus we may have counts very little above the normal, 15 to 30 to the cubic millimeter, in which case the fluid may be perfectly clear; or the count may be in the hundreds or thousands, so that the fluid is very cloudy or opaque. Early in the disease the predominating cell may be the lymphocyte, just as in normal cases; but later the polymorphonuclear cells predominate to such an extent that the mononuclears are not found at all. These observations hold true whether the infecting organism is the meningococcus, streptococcus, staphylococcus, pneumococcus, etc.

In encephalitis lethargica and early acute poliomyelitis there is a slight increase in the lymphocyte count, which is likely to be much more marked in the latter; indeed the count is not likely to go much beyond 30 to 50 cells to the cubic millimeter in encephalitis, while it may be several hundred in acute poliomyelitis. This is probably due to the fact that meningeal involvement is so very common in paralysis, as it seems to be pretty well recognized that infections of the parenchyma do not as a rule cause such marked changes in the fluid as infections of the coverings of the brain and cord. While lymphocytes and plasma cells are found in both these diseases, we may say that this is a more characteristic finding in encephalitis. Especially is this true in the later stages, when, in addition to these cells, one is likely to find quite a number of polymorphonuclear cells in poliomyelitis.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

In tuberculous meningitis we find an increase in the lymphocytes and usually the presence of a moderate number of polynuclears. One finds more lymphocytes than in encephalitis and is much less likely to find plasma cells than in poliomyelitis.

In cerebral hemorrhage it is not uncommon to find red blood cells in the fluid, but usually the diagnosis in these cases is not dependent in any way upon an examination of the cerebrospinal fluid. As a rule, the white cells are not increased in tumors of the brain or cord, or only increased slightly.

In examining the fluid I have found certain pretty constant relations to exist between the cell count and other examinations. Thus, one usually finds in cases where the suspicion of syphilis is strong, that the cell count is increased when the Wassermann test is positive; but even if the diagnosis of syphilis is certain from a purely clinical standpoint, the Wassermann test may be absolutely negative. In these latter cases there is usually no increase in the cell count, so that the two examinations seem to run closely parallel. However, this is not always the case, as it happens in rare cases that we get a positive Wassermann with a normal cell count; or an increased cell count with a negative Wassermann in known syphilitic cases, even when large quantities of fluid are used in the test. In these cases I have considered the cell count the more reliable of the two. But the relation of the cell count to Noguchi's butyric acid test for protein is much closer; so much so that I believe the two tests run strictly parallel. At any rate I have never found a single case of increased cell count over 30 per cubic millimeter that did not show a positive butyric acid test, nor a positive butyric acid test that did not show cellular increase, provided the cell count was made at once after puncture. In other words, any irritation or infection of the central nervous system of such a character as to produce a positive result in the one examination gave a positive result in the other also. On the other hand, in the conditions spoken of above —typhoid fever, measles, influenza, etc.—where I have found the cell count uniformly normal, I have also found the butyric acid test negative.

These are a few observations that I have made that seemed to me to be important and of especial interest. No doubt, there are many other things to be said on the subject which I hope will be brought out in the discussion.

DISCUSSION

Dr. Max H. Weinberg (Pittsburgh): I wish to call attention, first, to the statement that the fluid cell count in encephalitis is not higher than fifty. I think that is open to question. I have seen a case with as many as six hundred cells, during the first epidemic of the disease in New York early in 1919. Right now I have a case that started with marked meningeal symptoms, in which the cell count was seventy-five. It is a definite case of encephalitis.

We sometimes get an increased cell count in brain tumor, depending on the proximity of the tumor to the meninges. When this is close to the meninges, we get an increased cell count and an increased globulin reaction. I did see some cases of encephalitis with slight meningeal symptoms in which we did not find an increased cell count, yet we did find a globulin reaction early in the disease. The pathologist put it at plus-one, which was very mild. Sometimes the fluid clears up, and sometimes there is an increased cell count later.

Dr. John A. Lichty (Pittsburgh): I should like to ask whether Dr. Whitcraft has seen a case of encephalitis without an increased cell count, and to ask the first discusser of the paper at what date those cases of encephalitis occurred in New York.

Dr. Henry K. Mohler (Philadelphia): I should like to ask Dr. Whitcraft whether he noticed a definite relation between the sugar reduction test and the cell count of the spinal fluid.

Dr. Whitcraft (in closing): As Dr. Weinberg says, we do find, of course, in many cases, the presence of the globulin reaction without any increase in the number of cells. Probably the finest examination, and the one that most constantly shows some positive results in cerebrospinal fluid, is the globulin test; and in certain cases of disease of the central nervous system, we get a globulin test without the presence of an increased cell count. I have never seen a case of encephalitis without a cellular increase. However, I have studied only four cases, which may account for the fact that I have not seen any with a very high cell count. I have never made any observation, any accurate observation, as to a relation between the cell count and sugar reduction.

THE UREA CONCENTRATION TEST FOR KIDNEY FUNCTION*†

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For many years the diagnosis of kidney disease depended largely, aside from the clinical findings, upon the results of urinalysis. But in more recent times it has been found that this is not as reliable a guide as formerly was thought. Many observers now believe that albuminuria and even casts do not in themselves mean kidney disease and on the other hand, the absence of albumin and casts from the urine does not exclude the possibility of a renal lesion. MacLean and Russel,[1] speaking of interstitial nephritis, summarize this thought in the following fashion: "The gravity of the case is in no way necessarily related to the amount of protein present; very severe cases may on some occasions show no protein whatever. Again, it has now been thoroughly established that albuminuria *per se* is not necessarily an indication of renal disease, and may be present in individuals whose kidney function is quite normal. In healthy soldiers who had just completed their training, MacLean found albumin in the morning urine in 6 per cent. Further, it is possible for epithelial and hyaline casts to be present without any material or even appreciable kidney defect, so that in the absence of other symptoms the presence of albumin and even of casts is not necessarily of much value in assessing the degree of renal inefficiency involved. Much albumin and many casts are often found with a slight lesion and a mere trace of albumin or many casts may be associated with a gross lesion."

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†From the Department of Pathology, Jefferson Medical College.

For these reasons it has been necessary to formulate more accurate methods to aid in the diagnosis and prognosis of a renal lesion. These may be outlined as follows:[2]

1. The determination of the rate of excretion of a known amount of a chemical substance, injected or ingested. Of these methods the phenolsulphonephthalein test is most generally used.
2. The determination of the degree of retention in the blood of various normal metabolic products, such as urea, non-protein nitrogen, creatinin and uric acid.
3. The comparison in a patient on a known test diet between the ingestion and excretion of nitrogen, salt, water, etc., often spoken of as the "Two Hour" test.
4. A determination of the ratio between the concentration of various metabolic products, ordinarily urea, in the blood, and their excretion in the urine, the result being expressed as a ratio of excretion or coefficient. This is known as Ambard's coefficient or McLean's index.

Of the first methods the phenolsulphonephthalein test is the one most generally used, and for this reason it is unnecessary to dwell upon the manner in which it is performed. One word of caution may be mentioned, however, and that is the accuracy of the syringe used in the injection of the dye substance. Syringes often vary from 10 to 20 per cent, and this has a great influence upon the total excretion of the minute amount of dye substance used in the test. Pederson[3] believes, too, that the color of the urine has a marked influence on the reading of the test and that such factors as metabolism, excretion, technic and vision account for a 15 per cent loss of dye substance. Another technical objection is the method of administration. Nearly all patients object less to a dose of medicine by mouth than an intramuscular injection.

Aside from these technical matters many observers are convinced that the phenolsulphonephthalein test is of but little value in the early stages of chronic nephritis. Addis and Watanabe,[4] in their work on the urea-excreting function of the kidney, object on the well established ground that the pathological process in early or moderately advanced chronic nephritis is, as a rule, not uniformly distributed, but involves certain areas of the kidneys more than others and commonly leaves parts entirely unaffected, so that the slightly or wholly unaffected sections of the kidney may find no difficulty in excreting this minute amount of dye in a manner entirely comparable to the mode of excretion of normal kidneys.

The last objection holds true for the value of the determination of the degree of retention in the blood of such metabolic products as urea. Not until the kidney is grossly diseased (some authors state that the quantitative reduction must be to one-fourth of its normal anatomical structure) do the nitrogen constituents increase in the blood. This detracts from the value of the determination in the diagnosis of an early or moderately advanced renal lesion. The further fact that the degree of nitrogen retention is greatly influenced by the previous diet often makes the test difficult to interpret. Then too, these are methods demanding excellent laboratory facilities and considerable skill in performance, and for these reasons are inaccessible to the average practitioner.

The administration of a test diet and the determination of the excretion of nitrogen, salt and water, or the "Two Hour" test as some prefer to call it, may be modified for ordinary purposes in the following manner. Permit the patient to have three full meals and all the water desired with meals, but no food or fluids between. The urine is collected in two-hour periods during the day and one specimen for the total night elimination. All are measured and their specific gravities taken. The normal individual should show a polyuric response to meals, should vary the specific gravities of any two specimens by at least nine points, and the night urine should be small in amount (ordinarily less than 750 c.c.) and high in specific gravity (1018 or above).

A departure from the normal is noted in a failure of concentrating power and a loss of kidney elasticity, i. e., there is a tendency toward a large amount of night urine of low specific gravity and later a fixation in quantity and specific gravity of the day specimens.

Though the test in this form may be generally applied and undoubtedly gives splendid results, it has been found so delicate that its interpretation is often difficult and sometimes hazardous. Thus it is not only in chronic nephritis that the response to a test meal may be altered; but likewise in pyelitis, cystitis, hypertrophied prostate, marked anemia, pyelonephritis, polycystic kidney and diabetes insipidus.[5] The state of the water reserve of the tissues is another factor of considerable importance in affecting the response to a test meal. It is obvious that an edematous patient will react differently to the ingestion of fluids and diuretic substances than a normal person or a nonedematous nephritic. This makes the correct interpretation of the test exceedingly difficult.

The last method mentioned, known as Ambard's coefficient or McLean's index, may be dealt with very shortly. The procedure is so highly technical as to be impossible of performance outside of hospital practice and is so laborious that the patient may refuse to be utilized. Again it is influenced by extrarenal factors; and lastly, it is not so certain that it gives very much more information than the determination of the degree of nitrogen retention.

Thus is the field open for a method of testing renal function which will show earlier involvement than the phenolsulphonephthalein test or the determination of the degree of nitrogen retention; which will be easier to interpret than the "Two Hour" test; and not so technical as the methods of Ambard and McLean.

UREA AS A TEST SUBSTANCE FOR KIDNEY FUNCTION

Urea possesses many advantages as test substance for renal function. These may be outlined as follows:

1. It is a true end product of protein metabolism and is incapable of further alteration within the body.
2. It is a normal excretory product.
3. It is excreted practically only by the kidney.
4. It may be given in large doses and is readily absorbed and taken up equally by all the fluids and tissues without disturbing any essential physical equilibrium of the body. Only when given in immense doses—100 to 125 gm.—does it produce symptoms of intoxication.[6]
5. The administration of a large dose of urea throws a strain upon the kidneys. This appears to be its greatest advantage as a test substance for renal function. As before mentioned, the lesion of early or moderately advanced chronic nephritis is a patchy one and the areas of normal or little involved kidney substance apparently have no difficulty in eliminating a minute amount of dye such as phenolsulphonephthalein, but it is felt that such kidneys will show functional incapacity when subjected to the strain of a large dose of urea. As an example, we are well aware that a diseased heart is not necessarily a decompensating heart and may meet perfectly readily the ordinary demands of circulatory function. When there is a sudden circulatory demand, however, the cardiac mechanism proves inadequate and the symptoms and signs of decompensation become apparent. In the same manner a diseased kidney may meet the ordinary functional demands and the lesion remains latent. When a strain is put upon the kidney, however, the reserve power being lessened, it fails to meet its demands and shows functional inefficiency. Thus the administration of a large dose of urea should bring to light latent kidney deficiencies.

THE UREA CONCENTRATION TEST

MacLean and DeWesselow[7] have formulated a test with administered urea depending upon the decreased concentrating power of a diseased kidney. Their technic has been but slightly altered in the following work:

One cup of coffee and two slices of toast are permitted for breakfast, and thereafter food and fluids are restricted until the completion of the test. About an hour and a half after breakfast the patient voids, and then takes by mouth 15 gm. of urea dissolved in a 100 c.c. of water, flavored with tincture of orange.* The patient passes urine at the end of one hour and at the end of two hours, the second hour specimen being saved for analysis, the first being measured, however, to note any diuretic effects. The administration of urea induces a diuresis in a few individuals; and in cases showing an excretion of from 350 to 600 c.c. or more in two hours, any tendency to a low concentration, in the absence of other signs of renal disease, may be put down to excessive fluid. In such cases, however, a third hour specimen may be saved and analyzed. Urea is estimated by the urease method, but may be determined by the ordinary hypobromite method which, though inaccurate, gives approximately correct results.† A urea concentration in the second hour specimen exceeding 2 per cent, i. e., 2 gm. of urea to the 100 c.c. of urine, indicates a fairly efficient kidney, and less than 2 per cent an inefficient kidney. The lower the concentration, the more serious the kidney damage.

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*If blood is to be drawn for urea determination it must be taken before urea administration for it has been found that the administration of 15 Gm. of urea raises the blood urea level from 8 to 20 or more mg. per 100 cc. within two hours, and it may remain so for twenty-four hours or more.

†The original authors of the test used a modified hypobromite method, and found it very satisfactory. In my preliminary work[8] the ordinary hypobromite method was used, together with the more accurate urease method, and was found to give approximately correct results.

From more than one hundred such determinations compared with other methods of estimating renal function the cases recorded in the accompanying tables are selected as representative of the various types of renal and cardiovascular disease encountered.

In Table I are recorded selected cases of chronic nephritis with hypertension, i. e., the variety usually spoken of as chronic interstitial nephritis. At the top of the table are placed for the sake of comparison two normal reactions, showing blood urea and phenolsulphonephthalein figures within normal limits and urea concentrations exceeding 2 per cent. Cases of mild chronic nephritis are next in order, and show, in spite of normal urea and phenolsulphonephthalein figures, an inability to concentrate to 2 per cent. Moderately severe chronic nephritis (Cases 25 and 44) with phenolsulphonephthalein outputs of 25 per cent, concentrate urea to but 1.3 per cent; and severe chronic nephritis (Cases 16, 7 and 57) with a high degree of nitrogen retention, and only traces of phenolsulphonephthalein elimination, fail to concentrate to 1 per cent. Thus it is seen that the results of the urea concentration test, the phenolsulphonephthalein elimination, and the degree of nitrogen retention are closely approximate in the moderately advanced and severe cases of chronic nephritis but that in some of the milder cases it is the urea concentration test which indicates the functional deficiency.

TABLE NO. I.

Case.	Name.	Age.	Sex.	Clinical Diagnosis.	Blood Pressure.	Eye Grounds.	Urinalysis.			Blood Urea.	Phthalein 2 Hr. %.	Urea Concentration.	Comment.
							Sp. Gr.	Albumin.	Casts.				
24	D. M. ..	24	M	Normal	120	....	1020	....	....	15	68	2.9	
26	D. S. ..	25	M	Normal	108	....	1018	....	....	17	50	2.7	
10	J. H. ..	50	M	Chronic Nephritis ..	160	Neg.	1012	Trace	Hyaline	18	75	1.3	
22	F. P. ..	42	M	Chronic Nephritis ..	200	Pale disk: cont. vessels	1015	Trace	Granular	26	60	1.6	
20	N. G. ..	35	M	Chronic Nephritis ..	130	Neg.	1015	Cloud	Hyaline	17	50	1.8	
15	M. R. ..	40	M	Chronic Nephritis ..	140	Neg.	1020	Trace	Hyaline	13	50	1.75	
13	E. N. ..	34	F	Chronic Nephritis ..	110	Neg.	1010	Trace	Hyaline	16	45	1.9	Death: uremia.*
66	R. W. ..	57	M	Chronic Nephritis ..	230	Optic Neuritis	1015	Trace	Hyaline: granular	22	40	1.7	Test Meal: Fixation of sp. gr.
11	M. G. ..	42	M	Chronic Nephritis ..	208	Retinitis	1015	Cloud	Hyaline: granular	18	40	1.0	Death: Apoplexy.
29	E. P. ..	60	M	Chronic Nephritis ..	210	Disc marg. hazy .	1008	Trace	....	32	35	1.6	Test Meal: No Fixation.
9	P. H. ..	63	M	Chronic Nephritis ..	160	....	1010	Trace	Hyaline	27	30	1.3	
25	H. E. ..	58	F	Chronic Nephritis ..	170	....	1006	Trace	....	17	25	1.3	
44	E. O'B.	33	F	Chronic Nephritis ..	180	....	1010	Trace	Granular	38	25	1.3	
72	W. M. .	29	M	Chronic Nephritis ..	220	Arteries cont. and tort.	1010	Cloud	Blood	33	20	0.7	
23	F. K. ..	49	M	Chronic Nephritis ..	230	....	1004	Trace	Hyaline: granular	38	17	0.9	Death: uremia.
14	R. B. ..	29	M	Chronic Nephritis ..	220	Retinitis: hemorrhage	1009	Trace	Hyaline: granular	76	10	0.9	
8	V. S. ..	54	M	Chronic Nephritis ..	210	Retinitis	1014	Trace	Hyaline: granular	76	10	0.9	
21	B. O'D.	53	F	Chronic Nephritis ..	200	Retinitis	1002	Trace	Hyaline	40	5	0.9	
16	A. W. .	40	F	Chronic Nephritis ..	236	....	1010	Trace	Hyaline	97	Traces	0.8	Death: uremia.
7	W. M. .	30	M	Chronic Nephritis ..	160	Neg.	1010	Trace	Hyaline: granular	124	Traces	0.8	
57	J. M. ..	37	M	Chronic Nephritis ..	220	Albuminuric Retinitis	1010	Cloud	Hyaline: granular	162	Traces	0.9	Death: uremia.* Test Meal: marked fixation.

*Necropsy.

I wish to emphasize at this point the use of the latter term. Since it is impossible by means of functional methods to visualize the amount of structural damage to the kidney, one is justified only in interpreting the results of these methods upon a physiologic basis, and stating, not that the kidneys are normal or diseased, but rather that they are efficient or inefficient.

THE UREA CONCENTRATION TEST IN CARDIOVASCULAR DISEASE

There are occasional cases of cardiovascular-renal disease in which it is desirable to know to what degree the kidneys are responsible for the clinical picture. Many of these patients show marked albuminuria and a considerable number of casts and often a marked edema.

From a number of such cases two are selected in Table 2, which show the value of the urea concentration test as an aid in differential diagnosis. Case 36, an adult, white, male, with marked dyspnea and cyanosis, edema and albuminuria and all the clinical evidences of renal involvement, showed a urea concentration of 3.6 per cent. At necropsy there was pulmonary emphysema, chronic peribronchial lymphadenitis and a confirmation of the renal functional finding, in that the kidneys showed only passive congestion—no gross anatomical alteration.

Case 53, one of cardiac decompensation in which there was a question as to the degree of renal involvement, showed during the period of edema a fixation of quantity and specific gravity in the Two Hour test, a slight degree of nitrogen retention, and a low excretion of phenolsulphonephthalein—25 per cent. After the disappearance of his edema the test meal response was normal, the retention figures were slightly lowered, and the phenolsulphonephthalein excretion was 50 per cent. Both before and after the disappearance of his edema the urea concentration was well above 2 per cent, indicating the value of the test in a type of case in which the degree of water reserve of the tissues profoundly alters the test meal response and the phenolsulphonephthalein excretion. The failure of the latter test in these cases is probably a problem of absorption and would not occur if the dye was given intravenously. That the factor of absorption from the gastro-intestinal tract enters into the accuracy of the urea concentration test is likewise true, and it is for this reason that the urea had best be given on an empty stomach and the analysis made on the second hour specimen (to permit complete absorption of the drug).

TABLE NO. II.
THE "UREA CONCENTRATION TEST" IN PASSIVE CONGESTION OF THE KIDNEYS

Case.		Age.	Sex.	Clinical Diagnosis.	Blood Pressure.	Eye Grounds.	Urinalysis.			Two-hour Test.	Blood Analysis.			Phthalein 2 Hr. %.	Urea Concentration.	Comment.
							Sp. Gr.	Albumin.	Casts.		Urea.	NPN.	Creat.			
36	I. A.	45	M	Pulmonary emphysema; chronic myocarditis	120/70	Low grade optic neuritis	1025	Cloud	Hyaline; granular		23	47	1.8	....	3.6	Marked dyspnea and cyanosis. Death.*
53	J. R.	65	M	Aortic regurgitation	120/70	Neg.	1025	Trace	Granular	Fixation of quantity and specific gravity	24	53	2.4	25	2.8	Edema.
										No fixation ...	18	40	2.0	50	3.0	No edema.
										Showing the influence of the water reserve of the tissues on the test-meal response.						

*Necropsy.

TABLE NO. III.
THE "UREA CONCENTRATION TEST" IN CHRONIC PARENCHYMATOUS NEPHRITIS.

Case.	Name.	Age.	Sex.	Clinical Diagnosis	Blood Pressure.	Eye Grounds.	Urinalysis.			Blood Analysis.			Phthalein 2 Hr. %.	Urea Concentration.	Comment.
							Sp. Gr.	Albumin.	Casts.	Urea.	NPN.	Creat.			
46	K. K.	18	F	Chronic Parenchymatous Nephritis	115/70	....	1027	Cloud	Hyaline: Granular .	20	43	1.4	52	2.6	Edema: Headache: Marked albuminuria.
64	M. C.	19	F	Chronic Parenchymatous Nephritis	110/70	....	1020	Cloud	Hyaline: Granular .	29	....	1.3	60	4.2	Edema: Headache: Marked albuminuria.
68	T. K.	31	F	Chronic Parenchymatous Nephritis	140/90	Albuminuric Retinitis with hemorrhage	1015	Cloud	Hyaline: Granular .	17	28	1.2	48	2.3	Marked clinical improvement.
								Test-meal: Delayed response to meals; night urine 640 c.c (equal to day); specific gravity 1003.							

VALUE IN PROGNOSIS

In those cases showing a progressive lesion, the test demonstrated the downward course of the disease. Thus case 13 (Table 1), a chronic nephritis with an acute exacerbation following ether anesthesia, showed an initial concentration of 1.9 per cent. Ten days later—one week before the death of the patient—she concentrated to but 1.5 per cent. A partial necropsy was obtained, at which the kidney was found to show a recently engrafted glomerulotubular lesion on a chronic interstitial nephritis.

Case 29 (Table 1), a slowly progressive chronic interstitial nephritis, showed on admission a phenolsulphonephthalein excretion of 35 per cent, a blood urea of 32 and a urea concentration of 1.6 per cent. He improved with rest and was discharged from the hospital, only to return three months later complaining of severe dyspnea. At this time his phenolsulphonephthalein and urea retention figures were about the same as on admission but his urea concentration was reduced to 1.4 per cent, indicating the delicacy of the test as an aid to prognosis.

On the other hand a case of mercuric chlorid poisoning, reported elsewhere,[9] showed a progressive rise of urea concentration from 0.85 per cent (July 27, 1920) to 1.85 per cent (September 15, 1920), the date of the patient's discharge, clinically cured. This progressive rise of concentration power closely paralleled the phenolsulphonephthalein excretion and curve of blood urea. The patient returned three months after his discharge from the hospital and at that time showed a blood urea of 15 mg. per 100 c.c., a phenolsulphonephthalein elimination of 60 per cent in two hours, and a urea concentration of 2.6 per cent; demonstrating the return to a physiologic normal in the acute nephropathies of this nature.

LIMITATIONS OF THE UREA CONCENTRATION TEST

The normal kidney behaves differently toward the various substances of excretion and should be judged separately for each. This difference in behavior becomes even more marked in renal disease. In the type commonly known as chronic interstitial nephritis there is usually a tendency to nitrogen retention; while in the form spoken of as chronic parenchymatous nephritis, salt and water are, as a rule, eliminated with difficulty. It is in the latter type of case that functional methods generally are inadequate and the urea concentration test, as may be noted in the column so headed (Table 3), likewise fails to indicate the degree of functional impairment. It must be stated, too, that in certain other cases of mixed chronic nephritis (nitrogen, and salt and water retention) the test, in spite of distinct clinical and functional evidences of nephritis, at times fails to demonstrate the renal inefficiency.

CONCLUSIONS

The urea concentration test appears to be a simple and fairly reliable method of determining the efficiency of the kidney but, notwithstanding certain theoretical advantages which it possesses over other methods, practically it is not ideal and should, therefore, be considered a useful adjunct test to be employed in conjunction with other methods, the whole being weighed with the clinical data in an evaluation of a case of renal disease.

1906 Walnut Street.

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DISCUSSION

Dr. R. R. Snowden (Pittsburgh): Dr. Weiss has gone thoroughly into this interesting subject. I am glad that he showed the third chart and made the remarks he did. It emphasized one of the most important points to consider, namely: that the function of the kidney is to excrete waste products, and that these are apparently excreted independently of one another. Therefore, in considering a test of this type for renal function, we must bear in mind that we are testing the excretion of nitrogen bodies only, and that we can draw no deductions from it as to the excretion of salts or other types of waste products. What are the advantages of using urea to test the ability of the kidney to excrete nitrogen bodies? One is that we are using a substance that is normally excreted by the kidney and not a foreign substance. That is an advantage, in that we know that if there is a change in the excretion of this particular substance, it indicates a change in the excretion of that substance as developed in normal metabolic processes. There are, however, disadvantages that make the test one that should be adopted with caution.

In the first place, urea is a diuretic. The use of this substance may so further stimulate the kidneys that we do not get as accurate an idea as we should of what the kidney does normally, when not forced to excrete this urea. Another objection is that the substance is given by mouth, and must be absorbed from the stomach. In conditions associated with reduction in renal function, there are apt to be gastric upsets, and also reduction in cardiac efficiency, so that absorption from the stomach may be greatly delayed. Therefore, this test must be carefully checked up with the absorption from the stomach before we can draw accurate conclusions from the amount of urea eliminated in the urine.

The relative advantages and disadvantages of the phthalein test and of the urea test, should be considered. Dr. Weiss's charts would indicate that the excretion of the two substances is more or less parallel, yet it seems to me that there are certain advantages in the phthalein test which indicates that we need not give it up for the test he has presented. One is the fact that it is injected hypodermically. I feel that this is an advantage. We know, when we have injected the dye, that it is in the body; and when it is injected intravenously, we know that it is in the blood stream.

Most of the factors of failure of absorption are thus eliminated.

Dr. Weiss has said that when we use urea, we test the utmost ability of the kidney; whereas, with a small amount of phthalein, we cannot do this. I think that he is wrong. It makes no difference, within certain limits, how much phthalein is injected: the same proportion will be excreted. Thus, if you give only half of what is generally used, there will be excreted in two hours about 60% of this amount injected; or, if you give two or three times this amount the kidney will still excrete from 60 to 70% of the amount injected. This indicates clearly that the kidney exerts its utmost excretory power on the dye injected and hence the percentages recovered represent the total functional capacity.

Dr. Weiss is to be commended for the very thorough manner in which he has studied the urea concentration as a functional kidney test. I do not believe it can supplant the phthalein test as a practical, clinical procedure. Nevertheless, such studies are of great use in adding to our knowledge of renal function and this unusually complete work of Dr. Weiss is a very valuable contribution.

Dr. Ralph Pemberton (Philadelphia): I have been much impressed by the sane viewpoint pervading this sequence of remarks. I think that we are all familiar with the undue emphasis formerly placed on certain tests of renal function. We do not have to look back very far to recall, for example, what was claimed by many for the phthalein test and the Ambard coefficient. The more one studies biologic phenomena at large, the more difficult it becomes to ascribe specificity to any single test of function.

I think Frothingham, of Boston, has said that in order to visualize kidney function one must visualize the various things that the kidney can or cannot do. Mosenthal's so-called nephritic test meal has for some time impressed me as affording the surest measure of kidney function because it asks the kidney to do its work under controlled, but at the same time, normal metabolic conditions, and then measures the response. The functional test of the urea output to which Dr. Weiss has called attention will justify further attention and development, especially if correlated with such a wider view of renal activity. I think Dr. Weiss has done a useful service in further emphasizing this test.

Dr. Weiss (in closing): It is true that in some few individuals a large dose of urea induces a diurèsis, but McLean and DeWesselow believe that a low concentration, under these circumstances, in the absence of other signs and symptoms of a renal lesion, may be put down to excessive fluid and not to kidney disease.

The problem of absorption of urea from the gastrointestinal tract must enter into the accuracy of the test just as absorption from the subcutaneous tissues or muscles enters into the accuracy of the phenolsulphonephthalein test. Giving the urea on an empty stomach and using the second hour's specimen for the determination will probably obviate this difficulty.

Please understand that I do not recommend this method to supplant the phenolsulphonephthalein test. I believe the latter is the best and simplest method for general use. But I do feel that the urea concentration test will be found a useful method to be employed as an aid in diagnosis and prognosis of a renal lesion.

MOSS-AGATE TRACHEAL SPUTUM*

CHEVALIER JACKSON, M.D.

PHILADELPHIA

"Moss-agate" is the name I have given to a certain distinct kind of sputum that is seen only in diseases of the trachea, and which I believe has not been recognized as a distinct pathologic entity, nor as pathognomonic of tracheitis; nor has it been mentioned in literature so far as I am able to determine.

The characteristics of the sputum vary somewhat with the extent of the changes that have taken place in the tracheal mucosa. In general, the main characteristics, some of which are present in every case, are as follows:

1. A gray color.
2. A degree of opalescent translucency.
3. A dark mottling which gives to the sputum an appearance like a gray moss-agate stone.
4. A more or less globular form of sputum mass.
5. A tough tenacious consistency, sometimes gelatinous.
6. A tendency, at times to be projected from the mouth in coughing. "Like a ball of putty" is a description sometimes given by patients. I have had projectile-like balls of this sputum come through the bronchoscope like chewed paper wads from a blow gun, and flatten against my glasses.
7. A tendency to accumulate in the larynx, often as pellets on the cords, whence it is removed by cough, or by "semicough," which is the name I have given to the voluntary modified form of cough usually referred to as "clearing the throat." In most cases characteristic secretions may be seen with the mirror, closely adherent to the vocal cords, or more often, in the posterior commissure of the larynx.
8. When it accumulates on the cords, it is likely to cause diphthongia or diplophonia.
9. A scantiness in quantity as compared to the sputum of most bronchial and pulmonary diseases.
10. Intracellular granules of hemosiderin in the sputum.

The typical characteristics of the sputum may be more or less modified by admixture of bronchial and pulmonary secretions.

For many years while living in the soot-laden atmosphere of Pittsburgh it did not occur to me that the dark irregular mottling in expectoration was ever anything other than the normal cleansings of the atmosphere by the arrest of the suspended particles of carbon that adhered to the moist mucosal surface of the trachea; because it is undoubtedly true that everyone living in such an atmosphere does expectorate from the air passages, upper and lower, a greater or lesser amount of such sooty sputum. When my patients would return after being away in a clean atmosphere and state that they still brought up dark sputum I supposed that the sputum was darkened by the accumulations of the previous residence in the smoky district. Doubtless, in some cases, this was the true explanation. My first awakening was when I discovered, many years ago, in the captain of a sailing vessel, the typical tracheal sputum of gelatinous consistency and with "moss-agate" mottlings. The captain stated that he had never lived in a city, and that while at sea, for many years, he had brought up occasionally, when clearing his throat, the same kind of sputum. At times it would be coughed out and occasionally a small putty-like ball of it would be projected from his mouth while coughing. This patient had a chronic laryngotracheitis of alcoholic origin, the laryngeal condition being aggravated by years of bawling at the seamen.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

From that time on I observed carefully every case of tracheitis coming from a section of the country where bituminous coal was not used, and in cases of bronchoscopy for foreign-body, careful observations of tracheal secretions were made. From these two classes of observations it became evident that the dark mottlings in the tracheal sputum are not due to foreign particles collected from the air. Of course, to this true tracheal, moss-agate mottling may be added particles of soot and dust in suspension; and individuals with no inflammatory condition in the trachea, exposed to a sooty or dusty atmosphere may have sputum darkened by the cleansings, without any of the true moss-agate type of discoloration. The absence of tracheitis is, however, according to my observations, rather rare; because a chronic tracheitis is a more or less constant condition in dwellers in the dusty, sooty atmosphere of most of our large manufacturing cities. It is certainly as common in Philadelphia as it is in Pittsburgh.

The moss-agate secretion is found only in the trachea, or in the larynx on its way upward. At least I have never been able to get a characteristic specimen from the bronchi. It seems to be brought up by the cilia of the trachea through the posterior commissure of the larynx. Occasionally this stream is interrupted by cough which scatters the sputum more or less, and this probably accounts for its presence on the cords, which, not having cilia, are cleansed by cough or by semicough, a modified form of bechic effort known as "clearing the throat." The presumptive reason for the main stream passing out the posterior commissure is that the epithelium there is more or less ciliated while that of the cords is not. There may be an additional reason in the endolaryngeal movements. In referring to this stream coming up through the posterior commissure, it is not meant that this route is peculiar to moss-agate tracheal sputum. This is the route through which all secretions are brought by ciliary action from any part of the tracheobronchial tree. Blood, when in very small quantity, is brought up the same way.* When the stream is interrupted by cough the thin line of blood may show as a streak in the sputum.

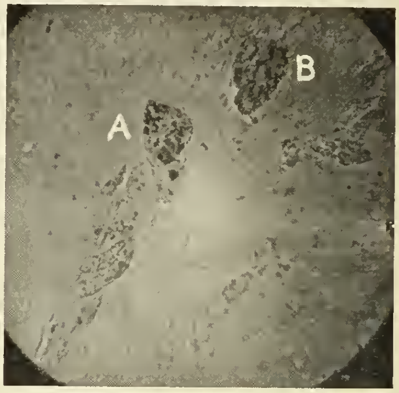

Fig. 1.—Moss-agate sputum from a case of subacute tracheitis in a man aged 50 years. Endothelial cells showing granules of hemosiderin. The cells at A and B are very heavily loaded with the granules. (Photomicrograph made by Dr. John I. Fanz from slide prepared by Dr. Randle C. Rosenberger.)

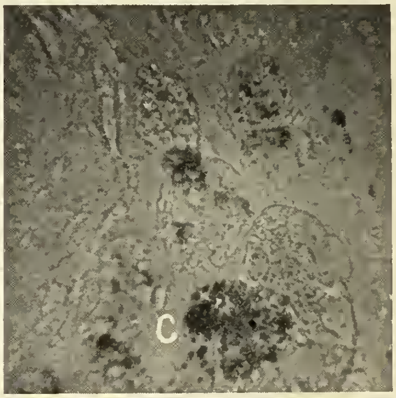

Fig. 2.—In the lower part of the illustration is seen a group of endothelial cells, of indistinct outline, containing large and small granules of hemosiderin. (Photomicrograph made by Dr. John I. Fanz from slide prepared by Dr. Randle C. Rosenberger.)

To determine the nature of the mottled discoloration that gives the characteristic moss-agate appearance, I submitted to Dr. Randle C. Rosenberger, of Jefferson Medical College, a number of specimens of the secretions removed by bronchoscopy from the trachea of two patients who had for years had a chronic tracheitis. Dr. Rosenberger reported as follows:

Case I. The specimen of tracheal mucus submitted by you on November 19, 1918, was examined with the following results:

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*Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, 1914. Also, Archives of Diagnosis, April, 1908.

The specimen was of a grayish, almost slaty, tint, was extremely tenacious and was inodorous.

Teasing the specimen with needles and examining in the fresh unstained condition the following elements were found: epithelial cells, polynuclear leukocytes, endothelial cells (?); many globoid bodies both small and large (some of the latter possessing concentric markings resembling amyloid bodies) and shreds of mucus.

Besides these elements could be seen irregular granules of pigment which were entirely intracellular, being contained within the epithelial and endothelial cells and in a few polynuclear leukocytes. In my opinion these irregular granules were hemosiderin. This pigment was almost black in color and remained, of course, unstained when different reagents were applied. The larger cells (epithelial) contained masses of the globules of mucin, but these globules were absent from the smaller (endothelial) cells.

Drying the mucus upon slides and staining by appropriate methods, polynuclear leukocytes, a few eosinophiles, epithelial and endothelial cells were observed, as well as the globules of mucin and shreds of mucus.

Thinking these globular bodies were fat, Sudan-III and Scharlack R were applied but no reaction to these reagents took place. They also were negative to the test for amyloid material.

By chemical tests albumin was absent, but mucin was present. The test for occult blood was positive, the test for peptone negative.

Having observed the granules of pigment and believing that they explain the peculiar color of the mucus, I did not make any bacteriological examination, as I do not think that bacteria would play any part in this peculiar phenomenon. I enclose two photomicrographs and a card with crude drawings to illustrate the size of cells and extent of phagocytosed granules.

Case II. The specimen of tracheal mucus submitted Friday, November 21st, contained epithelial cells, endothelial cells, few polynuclear leukocytes and a large quantity of mucin. By chemical examination albumin was negative, mucin positive, peptone negative, occult blood negative. No crystals. The same pigment as noticed in the first specimen of November 19th was observed, and I believe this corresponds to hemosiderin.

RANDLE C. ROSENBERGER.

CONCLUSIONS

1. Moss-agate tracheal sputum is the name given by the author to a characteristic secretion seen in cases of chronic tracheitis.

2. The characteristics are:

(a) A gray color.

(b) A degree of opalescent translucency.

(c) A dark mottling which gives to the sputum an appearance like a gray moss-agate stone.

(d) A more or less globular form of sputum mass.

(e) A tough tenacious consistency, sometimes gelatinous.

(f) A tendency, at times, to be projected from the mouth in coughing.

(g) A tendency to accumulate in the larynx, whence it is removed by cough or by semicough.

(h) When it accumulates on the cords it often causes diplophonia by creating temporary nodal points.

(i) A scantiness in quantity as compared to the sputum of most bronchial and pulmonary diseases.

3. Sometimes cough is required for the expulsion of this moss-agate sputum. It does not, in all cases, come out through the posterior commissure by ciliary action alone. These instances have been observed to be cases in which there was a scarcity of mucus to facilitate by lubrication the extrusion of the moss-agate sputum. Atrophic mucosal changes were present in some instances. In other cases the sputum was worked up by the cilia to the posterior commissure, whence it was removed by the voluntary effort known as "clearing the throat." To this the author has, for convenience, applied the name "semicough," because the physiologic mechanism is the same as that of cough, though of modified intensity and it is to a greater extent voluntary. All voice-abusers and nearly all city dwellers have this semicough so highly developed as to be almost involuntary because of well developed nerve-cell habit.

4. The author formerly thought the moss-agate mottling was due to soot filtered out of the atmosphere; but after discovering typical sputum in a captain of a sailing vessel, he found the sputum in many other patients who were living in a clean atmosphere.

5. The investigations by my colleague, Dr. Randle C. Rosenberger, of specimens bronchoscopically removed from patients by the author showed the mottled discoloration to be granules of hemosiderin located in epithelial and endothelial cells scattered through the other microscopically visible elements in the sputum. The tests for occult blood were positive.

6. Moss-agate sputum is pathognomonic of tracheitis.

DISCUSSION

DR. J. HOMER MCCREADY (Pittsburgh): We are always glad to hear Doctor Jackson read a paper because we may expect something original. "Moss-agate" surely is the correct name for this type of secretion. In making laryngeal examinations I have observed this moss-agate secretion very often. In examining the trachea and lungs with the bronchoscope I cannot recall a single case where I have seen moss-agate secretion in the bronchi or lungs. It always seems to be in the trachea or larynx.

Doctor Jackson said this secretion is brought up by a cough, or semicough. I should like to add that it is also brought up by sneezing. Sometimes in sneezing these globular masses will be expelled into the mouth.

Another point is how far down the trachea the secretion extends. I think the internists will tell you that it will extend to just within the bifurcation. By auscultation you can hear a few râles, and on having the patient cough the mucus will be brought up, with a disappearance of the râles.

It is interesting to theorize as to what may cause this moss-agate coloring. On account of the chronic inflamation small petechial hemorrhages may take place in the submucosa, where the endothelial cells take it up and by their intercellular action break up the hemoglobin into the various blood pigments. Then by the process of diapedesis these cells are brought to the surface and become enmeshed in the tracheal secretions. On the other hand, I can also see where the sputum may get its moss-agate appearance from the carbon from the air. It is possible that the cells by their phagocytic action take up these very fine particles of carbon, which are then passed out into the trachea by the action of diapedesis and thence into the tracheal secretions.

Doctor Rosenberger said that he found small dark intracellular granules which remained unstained. It seems to me that if these granules were really hemosiderin and Perles' test was applied, the granules should have stained Prussian blue. Moss-agate secretion may be caused by the blood pigment hemosiderin, but I am rather inclined to believe that carbon plays an important rôle. Perhaps Dr. Jackson and Dr. Rosenberger will be able to give us fuller data on the subject later.

SPASMOPHILIA*

JOHN M. HIGGINS, M.D.

SAYRE

The object of this paper is to invite greater interest among physicians in a study of spasmophilia. No effort is made to submit anything new on the subject, but rather a review of the current literature and opinions is attempted. Probably this condition is frequently overlooked in children because it is not considered in differential diagnosis, and as a consequence the optimum results of treatment are not obtained. An excellent definition has been given by Dunn:[1] "Spasmophilia is a condition peculiar to the early years of childhood, characterized by hyperirritability of the peripheral nerves to mechanical and electrical stimulation and by a tendency toward tonic and clonic spasm." Among the other terms sometimes applied to spasmophilia or to some of its manifestations are tetany, laryngospasm, and general convulsions.

The exact etiology is not clear. However, many factors of some etiological bearing are understood. Thus, spasmophalia is very rarely found among the breast-fed babies or during the first three months of life. Most cases are in children from six months to two years of age, and the symptoms are most pronounced during the colder months of the year. A negative calcium balance can often be demonstrated in these cases. The effort has been made to explain everything by a disturbance of the parathyroid glands. The element of heredity is also considered and frequently there appears to be a great similarity to rickets. Certain articles of food are at times looked upon with suspicion—notably whey mixtures. Lack of sufficient air and sunlight certainly unfavorably influence the disease. Spasmophilia sometimes follows an acute illness. Whatever is the underlying cause, there is present in every case a disturbance of metabolism.

Clinically there are four general types by which the symptoms manifest themselves: 1, cases of laryngeal spasm; 2, eclamptic type; 3, carpopedal spasm, and 4, latent type. It must not be understood that every case resolves itself into one of these groups. The same case may present symptoms of more than one type and the same diagnostic principles apply in all cases.

Cases of laryngeal spasm may be very mild. The child may simply hold its breath when excited, but some children have a marked inspiratory stridor. A complete arrest of respiration may then follow, lasting from a few seconds to a couple of minutes, when the spasm relaxes and breathing becomes normal. At times, however, a fatal result may ensue.

The eclamptic type is characterized by localized and general convulsions. There is clonic twitching of muscles and loss of consciousness. Attacks last from a half to several minutes. There may be only one seizure, but often many repeated seizures occur in the same day. Sometimes the convulsive movements are tonic in character. A slight febrile reaction often accompanies or follows the attack. In children four or five years old this type of spasmophilia resembles epilepsy.

The cases usually termed tetany, demonstrating carpopedal spasm, are of great interest. The fingers and toes are in extension and are flexed in their relation to the metacarpal and metatarsal phalangeal joints. The wrists are flexed and the feet are in a position of talipes equinovarus. The spasm is tonic in nature, lasting usually a few minutes, although it may last for hours.

There are many cases of spasmophilia which show none of the more marked characteristics of the disease. The diagnosis must be made by the electrical reaction. Children affected with this latent form of the disease may develop the severe types. In connection with the latent class it is well to suggest that with any infant who appears to be unusually nervous or reacts abnormally to slight stimuli, spasmophilia should be considered in making the diagnosis.

There are three well established clinical signs to consider in the diagnosis. It must be remembered that the only constant sign is the electrical reaction, or Erb's sign. Chvostek's sign and Trousseau's sign are positive evidence of the disease when present, but may be absent in undoubted cases.

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Erb's phenomenon is that state of irritability when a cathodal opening contraction is produced by the use of less than five milliamperes of galvanic current. Often in babies or young children the actual taking of this test is difficult.

Chvostek's sign consists in a slight contraction of some or all the muscles supplied by the facial nerve, when the nerve is stimulated as by a sharp tapping beneath the zygomatic process.

Trousseau's sign is elicited by constricting the blood supply of the arm or leg for a couple of minutes. When present, the typical spasm for that extremity described under carpopedal spasm is produced. Testing this sign involves some danger of precipitating other spasmophilic reactions, as laryngospasm.

From a standpoint of differential diagnosis the most important conditions to consider are epilepsy, tetanus, enlarged thymus, retropharyngeal abscess and pertussis. The differentiation is not likely to be difficult, except from epilepsy. The convulsive attacks of spasmophilia in children of three to five years old may very closely resemble epilepsy. The electrical reactions will probably be of most assistance. It is not improbable that many supposedly cured cases of epilepsy in children in reality were spasmophilia. Fatal results almost never occur in this disease, except rarely in laryngospasm. As the child grows older all forms of spasmophilia tend to improve. It is essentially a disease of childhood. Under proper treatment the acute cases will usually respond in a gratifying manner.

The treatment is to be classified as preventive and curative. Maternal nursing is almost an absolute preventive. In all babies, and especially in those that must be fed artificially it is, of course, important to give the greatest attention to such details as fresh air, sunlight, and sleep. Infants of a proper age should be given a properly balanced and varied diet. The treatment of the actual condition varies some according to the symptoms and age of the child. In a young baby wet nursing, if feasible, is the ideal procedure.

Many consider spasmophilia to be associated with rickets and possibly a different phase of the same disease. On this assumption the use of calcium and cod liver oil is advised.[2]

Von Meysenburg[3] believes that he has demonstrated that calcium feeding does not influence the electrical reaction in spasmophilia. In pylorospasm, which can sometimes be considered as a spasmophilic manifestation, atropin is useful. Possibly it is of some value in other manifestations of the disease. In a word, however, the proper regulation of the diet and the routine of life is the real treatment. Calcium should be given a trial. The vitamine theory is usually considered in prescribing the diet, although Von Meysenburg[4] failed to demonstrate that withdrawal of vitamines caused spasmophilia. In the acute phases, as laryngospasm or convulsions, symptomatic treatment is indicated. Hot baths, elimination, calcium bromid or lactate are of avail. It is plain that in the treatment of the disease we must not place too much dependence upon drugs but that we must place the greatest dependence upon hygiene.

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DISCUSSION

Dr. A. Græme Mitchell (Philadelphia): It is a pleasure to be given the opportunity of discussing the subject of spasmophilia. Dr. Higgins has brought out the point that spasmophilia is probably frequently overlooked. He might well have left out the word "probably." While the pediatrist is always on the alert because he realizes the frequency of the spasmophilic diathesis, it is still true that the majority of diagnoses of reflex convulsions (due to the eruption of teeth, the presence of intestinal parasites, etc.) are made by the practitioners who are unaware of the existence of such a condition as spasmophilia.

Time did not permit in the paper read, nor does it permit the discusser to dilate upon the causation of the spasmophilic diathesis. The amount of research done upon this subject is tremendous. While much further study is necessary and while certain results obtained so far are conflicting, the present knowledge of the subject can be briefly stated, as follows: Calcium and magnesium act after the manner of nerve depressants, whereas sodium and potassium act after the manner of nerve excitants. Therefore, if for any reason there should be a diminution of calcium or magnesium in the body, or an increase of potassium or sodium, one would expect a condition of hyperexcitability of the nerves. Practically all recent researches show that calcium is diminished in the organs of the central nervous system and in the blood in spasmophilic subjects. Under ordinary circumstances even the spasmophile is furnished with sufficient calcium by mouth to supply the demands of the tissues, so that the fault does not seem to be in the availability of calcium in the diet, but rather in the amount of calcium retained. In other words, the fault is one of failure of calcium retention.

It is of considerable significance in this connection to note that not only can sodium and potassium salts be retained in the tissues in excessive amounts, but that under these conditions they may cause an output of calcium so that more calcium is excreted than is furnished; that is, a negative calcium balance occurs.

Increased electrical excitability of the nerves and even active symptoms, such as tetany or convulsions, have been produced by administering large amounts of sodium or potassium.

As to treatment: This depends logically upon following the several leads which a study of the causation brings out. First, calcium must be given, and secondly, something must be done to assist in its retention. Calcium may be given in 5 grain doses, as the lactate or the chloride, four to five times a day. In addition to the administration of calcium, cod liver oil should be given. The use of cod liver oil not only has been shown to be of value clinically, but it is a rational procedure because it can be demonstrated that it aids the retention of calcium. When calcium is given alone no increase in blood calcium can ordinarily be found, but when cod liver oil is given in addition the blood calcium rises. There is some evidence to show that the phosphorus in cod liver oil is the substance causing calcium retention, and indeed it may be good clinical practice to give phosphorus in addition to the cod liver oil. However, it may be said that cod liver oil is almost as specific in spasmophilia as it is in the closely related condition of rickets.

Other manipulations of the salts are often of value. Thus, giving magnesium sulphate subcutaneously may stop the spasmophilic convulsion. Very little has been done clinically with a diminution of sodium and potassium intake in spasmophilia although this would seem to be a rational procedure.

Not only is the causation of spasmophilia—about which it is only possible to summarize briefly the present knowledge—fascinating, but its relation to the parathyroid control of mineral metabolism, its close association with rickets, its diagnosis by the electrical reaction, etc., are all interesting.

May I make one other suggestion. Would it not be better to restrict the term "spasmophilia" to the diathesis itself, and to use the terms tetany (including carpopedal spasm), laryngospasm and eclompsia to the active manifestations of that diathesis? In this way there would be less confusion in the terminology.

I should like to reiterate two statements which I made before this Society last year: "The infant suffering from a convulsion should always be suspected of being a spasmophilic subject," and "Spasmophilia is by far the most common cause of convulsions in infancy."

THE MENTAL SIDE OF HYPERTHYROIDISM*

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It is my purpose in this paper to emphasize the important rôle of the mental symptoms in the so-called Basedow syndrome. Ordinarily, this term immediately calls forth in the mind of the physician, a restless, excitable individual with bulging eyes, bright sclera, scared look, and enlarged thyroid. While these symptoms are truly a part of the picture, yet all of them together appear in only a few of the cases, and usually, late in the disease when the patient's chances of recovery are problematical. The mental symptoms, on the other hand, appear comparatively early, and a careful search for them will practically always aid in establishing the diagnosis long before serious and permanent damage has been done to cardiac muscles, cortical cells, and viscera. Buckley[1] says: "By far the majority of the patients suffering from hyperthyroidism present mental symptoms in some degree. In fact, mental symptoms may be the earliest noted, that is, before cardiac or ocular symptoms become manifest. The most commonly noted are an intense and indefinite agitation with more or less mental and motor restlessness."

There is perhaps no clearer statement of the mental changes in this condition than the one given by Tanzi[2]: "As a rule, they are not regarded as presenting psychopathic symptoms, but they exhibit a characteristic and constant psychical syndrome consisting of excitement, restlessness, anxiety, loss of memory, and indecision of will. Doubts of an obsessive nature are added to the preoccupations of exophthalmic goitre, which concern themselves with any subject, and the patients become irresolute and incapable of mental work, irritable, diffident, quarrelsome, and timid."

The mental symptoms, although as Tanzi says, are usually not sufficient to condemn the patient to life in an asylum, are, nevertheless, so characteristic that they always point the way to the true diagnostic path.

These symptoms in brief are: restlessness, sense of unreality, depression, anxiety, agitated depression, apprehension for the future, a sense of helplessness and inability to overcome the environment, at times so marked that the patient thinks death the only possible way out of the difficulty, scintillating scotoma, weakness and paresthesias, loss of memory, and irresoluteness of the will. In some cases the mental syndrome resembles a more or less definite psychosis which we designate as a special type of hyperthyroidism.

Whether the toxic condition is the cause of the psychosis, or whether it merely tends to bring out the inherent defect of the individual, is a moot question and cannot be answered in the present state of our knowledge. Some authorities have gone on record in support of the view that it is, at least in a large percentage of cases, a cause of such well known and defined psychic syndromes as dementia precox, manic-depressive insanity, etc. Thus, Berkley and Follis[3] reason as follows: "We had come to the conclusion that in catatonia we had, possibly, to deal with a perversion of the function of one of the ductless glands. In particular, the thyroid body. The latter conclusion drawn from the passing similarity of certain symptoms common to both this malady and Graves' disease, and in particular the increased reflexes, the heightened mechanical muscular irritability, hyperidrosis, tremor, the skin changes, and profound loss of weight." They conclude: "Nevertheless, it is possible from the symptoms, that in catatonia we have a perversion of the secretion of that organ, and that partial thyroidectomy induces a return to normal in the secretion of the remaining portion of that gland. The return to the natural state of the reflexes, the decrease of the mechanical muscular irritability, as well as of the dermographia, the loss of pigment, also of the doughy pasty character of the skin (most noticeable in prodromal and mutism stage) and the later return to the normal, both of the mental as well as physical state, are at least suggestive that partial ablation of the gland is a factor, and has something to do with the rapid recovery."

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Hyslop[4] writes: "Exophthalmic goitre due to hyper- or dysfunction of the thyroid gland is not infrequently associated with insanity which may range from simple melancholia to acute mania."

"The prognosis is largely dependent on that for the exophthalmic goitre."

The majority of observers, however, go only so far as to say that these syndromes merely resemble the psychosis superficially, but are entirely dependent on the underlying toxic condition. We may thus see a manic-depressive type, with maniacal depression, self-accusatory ideas, some confusion, and extreme motor restlessness. There is also a mild paranoid type of hyperthyroid individual; not one with systematic paranoid ideas that we see in the true paranoia; nor the bizarre, absurd, loosely constructed paranoid delusions of the paranoid D.P.; but rather mild persecutory ideas which are usually bound up with the individual's sense of helplessness and apprehension, and which feelings he projects to external forces. There is also a type resembling very much the true dementia præcox, with apathy, indifference, hallucinations, and delusions. We may next mention the acute toxic type. Walker[5] describes it as follows: "There is elevation of temperature, extreme restlessness, tumultuous heart action, nausea and vomiting, epigastric and abdominal pain, loss of weight and emaciation, active delirium followed by stupor which precedes death. It looks and clinically is like a violent septic intoxication. All the bodily symptoms are here overshadowed by the mental symptoms. The clinical picture, from the mental aspect, is characterized by the syndrome 'amentia,' i. e., by a more or less violent confusion." There sometimes occur, though rarely, types that make one think of paresis, especially in the emotional and intellectual spheres. There is extreme loss of memory, emotional instability, marked tremor of hands, eyelids and facial muscles, and increased or absent reflexes. Massarotti[6] in his book, cites numerous cases, both his own and collected from the literature, illustrating the various types of mental syndromes that are met with in Basedow's. He writes: "We return to the statement we made at the beginning of the paragraph, that in Basedow we can meet with all forms of mental changes. However, there are some universally accepted as the most frequent: mania and melancholia, which are considered by various authors as first in frequency; then hysteria; the forms of confusion of a toxic type; then more rarely epileptic psychosis, dementia præcox, and progressive paralysis."

The case records that I present herewith, are taken at random from a large number of cases of hyperthyroidism to illustrate the more common mental symptoms and syndromes that occur in this disease.

Case 1. This case illustrates the milder mental symptoms of hyperthyroidism, such as the lack of attention, apprehension for the future, inability to adapt himself to his surroundings, and irritability.

J. Y. Age 20, American. Well built. Negative history.

C. C. Nervousness and weakness.

About five weeks before admission, the patient noticed that he could not keep his mind concentrated on his work. This soon became so marked that he could not concentrate his attention on anything. He lacked perseverance. Would start at some work and have to drop it before he finished it. This finally resulted in his discharge from his position. The work he was doing was only temporary while he was preparing to go to a technical school. He commenced to worry about his health and had apprehensions about his future, and about his ability to go through with his course. He became emotionally unstable, suffered with insomnia, and lost 23 pounds during two months. He also presented vasomotor disturbances. Pulse 100. Thyroid enlarged. No eye signs. Fine regular tremor of outstretched hands.

The next two cases represent the manic-depressive-like group. Case No. 2 had been confined in an institution for a year before the thyroidectomy operation.

Case 2. Mrs. A. S. Age 48, Austrian. Past history negative. Mother had thyroid trouble at menopause. One brother died from tuberculosis.

C. C. Nervousness, restlessness, agitation, and continuous talking.

For about two years, the patient noticed that she was getting more and more nervous, but was able to do her work. Weakness came on gradually, and about a year later she noticed that the least amount of work fatigued her. About that time, the patient's husband sold their home. There was marked emotional stress in connection with this, and she became worse. She worried a great deal about her condition. She had apprehensions for the future. She commenced to feel hot flushes—vasomotor instability. About a month later, insomnia developed. She would spend most of the day and night pacing the floor and talking constantly. Her talk centered mainly about the home her husband sold. The patient was placed in the county institution for the insane, with a diagnosis of manic-depressive insanity. About a year later she was brought to the hospital.

The examination at this time revealed the following: Skin dry and shiny. Senile appearance. Face expressed worry and preoccupation with absorbing and distressing thoughts. Pupils normal. No ocular signs. Slight fine tremor of outstretched hands. Thyroid enlarged. Isthmus easily palpable. Lateral lobes much enlarged and buried under sternocleidomastoid muscles.

Case 3. Miss R. B. Age 31, Russian Jewess. Had the usual children's diseases and pneumonia in childhood. Nine years ago she had what was diagnosed as catarrh of the throat. This was accompanied by despondency and the desire to die. This attack lasted about a year.

C. C. Depressed. Feels that she will remain a burden on the family. She has "jumping pains" in the stomach. Cannot concentrate. Had to quit her position on account of her inability to apply herself. She constantly feels like crying. Sleeps poorly on account of her distressing thoughts. The worry started when she lost a position which she held for six years. She was afraid she would be unable to get another position, and although she obtained another one equally as good, her worries continued and she had to give up her work. She constantly wishes she were dead. Feels extremely weak in the morning. Gets dizzy often. Has sensations of numbness in the side she lies on.

On examination she presents the following symptoms: No ocular signs. The skin of the face and forehead is thickened and wrinkled. Thyroid enlarged, particularly the isthmus and left lobe. Pulse 100 standing, and 88 in sitting position. Reflexes slightly increased. Hands are moist and clammy. Vasomotor disturbances are marked.

The sugar tolerance test: Fasting, 98 mg. of sugar; end of first hour, 243 mg. of sugar; end of second hour, 197 mg. of sugar.

The three cases that follow are what we may call dementia præcox in type.

Case 4. J. V., American-Italian. Age 24. Discharged soldier. He was hit on the head twice; once at the age of six, and again at the age of eleven. He did not lose consciousness on either occasion. Otherwise his history was negative.

C. C. Pain in occipital region and vertex. Inability to enjoy life. Stoppage of food in the intestines, and belching of gas.

Since he returned from France, he noticed that he could not be jovial and cut up with his friends as he formerly did. He was also unable to size up people and decide whom he liked and whom he disliked. He could not feel as care-free or "kid" as he would like to, but only remain serious and talk about his work. For this reason he does not get any enjoyment out of life. He does not worry about it, but he does think that he is different from other people. He sleeps poorly or not at all, and when he does sleep, "his mind seems to work rapidly and think, and think, and think." When he returned from France he thought that "everybody was wrong" and "he was right." He has no persecutory ideas however, and there are no actual hallucinations or delusions.

He was standing on the street one day watching the people and wondering why he could not enjoy life like they did, when pain suddenly developed in the occiput and vertex. It was more than a headache and it worried him. The pain is present every day. The pain is more like a pressure sensation. This condition is becoming progressively worse.

About two months ago he noticed a feeling of heat all over the body, in the late afternoon. Formerly, he disliked sweets and fats, but now he craves these things and feels that he never has enough of them. He eats ravenously and belches gas.

He gets angry at himself for being the way he is. He is never certain that he did a thing right. He is undecided about any course of action he has to take. He had not worked for the last few months because he does not know "what he would be working for."

On examination, we find his pupils irregular and unequal. Reaction fairly normal. A definite lateral nystagmoid twitch, also an oscillation of the eyeballs on vertical movements is present. He has a slight tremor of the outstretched hands. Von Græfe present but not very marked. Pulse 78 in reclining position. Thyroid enlarged and soft.

Psychic: He has ideas of reference; thinks that people talk about him, that they accuse him of shamming sickness. He knows that he is incapable of doing things. It seems to him that he is not the one that is thinking all those things. He has a sense of unreality. He believes that he can eat things now that he could never eat before. This takes the form of a somatic delusion with him. He is doubtful about his past and is constantly trying to determine whether he has always been that way. Thinks that he has had these thoughts for the last fourteen months. He has many doubts. He is apathetic and indifferent ever since he was discharged from the army.

I had occasion to learn later that this man was diagnosed previously by the government neurologist as a case of dementia præcox. The subsequent course of the disease and his ultimate improvement under proper therapy, prove both the correctness of the diagnosis as well as the classification, namely, dementia præcox type of hyperthyroidism.

Case 5. Miss I. S. Age 17, American Jewess.

She had influenza about two months before admission. She never recovered fully from this illness. Remained markedly asthenic, boisterous and talkative. Had some ideas of grandeur, and showed an inclination to discuss religion. Physically, she showed a tremor, slight von Græfe, and enlarged thyroid. Pulse 96.

This girl was operated on and she recovered slowly. About two months after the operation, while convalescing in the home of a relative, she had a catatonic attack. She showed extreme restlessness, talked in an incoherent manner and had auditory hallucinations and delusions. She had to be confined in an institution for the insane for about two months, but is now fully recovered.

Case 6. M. P. Age 30, Hungarian Jew.

C. C. For the last few months, imagines that people talk about him. His hands shake and he notices it particularly when he attempts to drink. Gets excited when in company. Is dissatisfied with things in general. Frequently gets hot flushes and suffers markedly from insomnia. He recently quit a good position in another city because he developed persecutory ideas about a friend, and to escape him, left the city. He has definite ideas of reference and some mild delusions about girls particularly.

Physically, he presents von Græfe and Moëbius signs, exophthalmos, fine tremor of the hands, and enlarged thyroid. While in the hospital, he showed a fairly marked negativistic state for about two days.

The next patient illustrates a case of traumatic hysteroneurasthenia, based on hyperthyroidism, exhibiting mild paranoid ideas, ideas of inadequacy, diffuse pains, apprehension, and feeling of helplessness. Again we see a case dependent on the underlying toxic condition but precipitated by trauma and exhaustion, due to worry and fear. The fear in this case was due to factional strife in his Union.

Case 7. G. G. E. Age 36, American. Past history negative.

This man dates his trouble back to a railroad accident which he had three months before. He was asleep in the caboose of a railroad freight train, when a severe jolt threw him against the wall, and he awoke with a start. In his own words: "I felt a shock from my head to my shoulders (like knocking the crazy bone). I jumped to my feet, and braced myself for another shock, but it did not come."

He complains of a sore spot in the top of the head, and of needle-like pains in the left side of the face, chin, and throat. He also complains of pain in both arms of a neurotic character, and a sinking sensation in both knees.

Psychic symptoms: It seems to him that objects he is looking at are tilting. He has a sense of unreality. He is very apprehensive for the future; is afraid that he will be a burden to his family all his life. "I feel that if I cannot get well, I am up against it." He has mild persecutory ideas as regards his fellow workers. While in the hospital, he showed the same mild persecutory ideas even as regards the doctors. He would insist on being told what is wrong with him, and after a thorough explanation, he would complain the very next day that we were keeping him in the dark about his state of health. He would insist on going home because nothing was being done for him. The other patients in the ward would annoy him, but he could not give any specific reason why, or tell how they annoyed him.

He presented a fine tremor of the outstretched hands. Nystagmus on looking to right or left. No exophthalmos nor von Græfe. The thyroid about the size of a small orange and infrasternal. Tenderness on pressure over nerve trunks of right upper extremity.

The next case illustrates a paretic type of hyperthyroidism. The Argyll Robertson pupils are probably due to fatigue, as are the diminished reflexes.

Case 8. H. C. Age 52, American. Negative personal history.

C. C. Loss of weight. Emotional instability. He cries almost constantly. Marked tremor of hands.

For the last six years, he has been going down hill, and losing weight markedly. His neck gradually enlarged. He became very irritable and had to quit his work, that of a railroad conductor, on account of it. He cannot keep himself from crying. His memory is very poor.

Physical findings: Pupils are slightly unequal. Both pupils practically do not react to light, but do react to accommodation. Marked tremor of tongue. A very marked enlargement of the thyroid, confined to the lobes. Coarse quick tremor of the extended hands. A positive von Græfe.

The Wassermann of both the blood and spinal fluid, and all other tests, including the therapeutic, were negative for syphilis.

I had occasion to examine this patient fourteen months after the operation, and while I found most of the neurological symptoms practically the same, there was no trace of emotional instability. He regained his weight fully. His memory was as good as ever, and he carried on his work satisfactorily.

We, then, see a wide variety of hyperthyroid cases, exhibiting in the main, only a few of the so-called classical physical symptoms of the disease, but the mental symptoms are well marked and defined. Some of these are so constant that they require further elaboration.

The feeling of strangeness which almost all exhibit, is worthy of note. The patient, unlike those in the true psychoses, has some insight into his condition. He notices a change in himself, but is at a loss to understand his feelings and actions. Many of them put up a struggle and try to reason themselves out of their dilemma. Most of them say: "I thought I was right and they were wrong, but I know now that I am wrong." This is a very characteristic statement. Three patients reported in this series, used this very remark in describing their perplexed state of mind. True, this does not keep up any length of time, and the patient gets soon again into difficulties with his friends and family.

It also helps to explain their mild persecutory delusions. Practically all of them get the feeling that their friends misunderstand them and think that they are shamming. This brings resentment on their part and they feel themselves neglected and later even persecuted, tending to increase their anxiety and irritability.

Their feeling of helplessness is increased by their inability to work, by their lack of stamina. This brings apprehension for the future. They see themselves a burden to their family. It increases their fear and many of them wish death rather than such a precarious existence.

These patients walk around as if in a dazed condition. Their perspective is dimmed. They see themselves shut out from the worldly activities of their friends and relatives. They have not the endurance for either work or play. This leads to introspection. They search for the reason of the change in their personality. They become morose and depressed.

As the toxic factor continues to operate, bringing in turn an accentuation of the symptoms, they get more and more despondent. Some of them put the blame on the environment, the external world; others have even flights from reality and develop hallucinations and delusions to counteract the unbearable reality.

The degree of depression and ultimate confusion is dependent on the reaction type of the particular individual. It is this factor, the mental characteristics of the personality, which determines whether the patient develops a true psychosis or a mild mental syndrome, but that the underlying and precipitating factor is the perverted thyroid activity and its toxic effect on the cerebro-cortical cells is now a practically established fact.

SUMMARY

1. Mental changes varying from mild symptoms such as irritation, anxiety, restlessness, etc., to severe grades of psychosis are found in practically all cases of hyperthyroidism.

2. While it is true that there is no definite hyperthyroid mental syndrome; yet, some of these mental changes are so fairly characteristic and constant that their presence should arouse suspicion in the mind of the examiner about the possibility of hyperthyroidism.

3. When the mental changes in an hyperthyroid individual do take a definite form of syndrome, it merely indicates the inherent characteristic of that particular individual, and that he would probably respond in similar fashion to any toxin, be it endogenous or exogenous.

4. These mental changes, especially the milder ones, are manifested early in the disease, and a careful search for them would aid in arriving at a correct diagnosis long before permanent physical changes take place in the viscera, cardiac muscles, and cerebro-cortical cells, and the immediate institution of proper therapeutic procedures would result in great and untold benefit to these unfortunate patients.

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DISCUSSION

Dr. Charles W. Burr (Philadelphia): Dr. Weinberg was kind enough to send me a copy of his paper, so I know the history of the cases that he did not relate. They will be printed in the Journal.

I do not like to criticize the speaker adversely; but one link in his chain seems to me to be lacking—the link that ties up the picture of the cases that he relates with hyperthyroidism. He assumes that because in cases granted to be hyperthyroidism these symptoms occur, therefore, if in other patients the same symptoms occur, they are also cases of hyperthyroidism. I think that is traveling along a little too quickly; because, undoubtedly, in other physical conditions we can have the same mental symptoms that occur in what we call hyperthyroidism—or what might more properly be called dysfunction of the thyroid.

That people get mental symptoms in hyperthyroid conditions is undoubtedly true; and not only people who come to doctors for treatment, but also people in the world at large. I am personally convinced that some of the upset in the world to-day is due to a talkativeness which is apt to go along with mild disorders of the thyroid, especially as shown in certain politicians in Washington. The mental alertness of the hyperthyroid, the eager and prompt sensitiveness that makes him a leader of everything, is often due to this cause.

The big thing, though, in the Doctor's paper, and the useful thing, is the admonition that we should not only, in all cases of mental disturbance, study the thyroid gland, but also go over a patient physically when he comes to us with any mental disease at all. I think that the great mistake we make is in saying, "The man is insane; what is the use of bothering? Send him to an insane hospital." If we study the body in any mental disease with the same care as the heart man, for instance, would—if we study all the organs of the body systematically, carefully, scientifically, in every way, I feel confident that every once in a while we shall find persons whom we thought to be the victims of purely mental disease who are really suffering from a physical disease that can be helped.

Dr. N. W. Winkelman (Philadelphia): I had the pleasure of reading Dr. Weinberg's paper *in toto*, and he has omitted a good bit in the reading. I think Dr. Burr has brought out one point that I myself thought was lacking—the connection between the thyroid and the symptoms shown in the cases. I do not believe that because a patient has mental symptoms and an enlarged thyroid, the mental condition is necessarily due to the thyroid any more than a patient with an enlarged thyroid who breaks his leg may be said to have the fracture as the result of the enlarged thyroid.

Another point that I thought lacking was metabolic studies. I believe that these, in thyroid conditions, will give us more knowledge than we possess to-day. As the result of examinations of ex-service men, one condition in particular has struck me—what we now call the "effort syndrome." I venture the assumption that we shall find the thyroid back of that. I do not know of any extensive studies of that syndrome, but it is something that we are going to make eventually here in Philadelphia—a study of those cases which present the same sort of mental symptoms, the same sort of restlessness, fluttering of the heart, etc., which cases of thyroid disease show. These cases have the same mental symptoms, but have no enlarged thyroid.

I think that very few, if any, cases of hyperthyroidism ever run their course without mental symptoms; but the mental symptoms are not always the first to appear. I believe that the physical symptoms usually come first, but I do not believe that any case goes far before mental symptoms, and definite ones, are found.

The term Reynolds has employed, "mental chorea," is very, very apt.

Dr. Alfred Gordon (Philadelphia): I think we had better use the term "dysthyroidism," because we are not very well posted concerning the disturbed function of the thyroid gland. We cannot always make the diagnosis of hypothyroidism or hyperthyroidism, so I prefer the word dysthyroidism, which means a physiological disturbance of the thyroid gland. At present we are discussing the mental phase of dysthyroidism, and I wish to confine my remarks to this particular part of the subject.

Whenever we deal with a case of dysthyroidism, we must consider two possibilities: first, the dysthyroidism, as associated with mental manifestations but not of the order of insanity; second, dysthyroidism associated with insanity. In the first case we must consider the mental attitude of the patient suffering with dysthyroidism. In endeavoring to present a mass of facts in his paper, the speaker, probably for lack of time, omitted one of the most important mental phenomena: Individuals suffering from a disturbance of function of the thyroid gland are highly emotional. They are very unstable in their temperament. They change their mood from moment to moment. Emotivity is one of the characteristics of individuals suffering from dysthyroidism, particularly in cases of exophthalmic goitre.

The second important possibility observable in the course of dysthyroidism is psychoses, mental disorder of the classical type. The Doctor mentioned a number of mental affections in connection with hyperthyroidism as cause and effect, viz: dementia præcox, paranoia, melancholia and mania. My personal experience is against it. There is not, according to my observation, such a thing as paranoia, melancholia or dementia præcox due to the thyroid gland.

When we have a case of dysthyroidism and the man presents symptoms of paranoid character, should we consider that the latter are due to a disturbance of thyroid secretion? I think this would be a great error. We should always consider the basis, I mean the constitutional make-up of the individual on which the dysthyroidism was grafted. Manifestations of dementia præcox, paranoia and melancholia may commence to make their appearance from almost any exciting factor. If a man suffers from dysthyroidism, he has toxic products in his system; and mental phenomena may develop from these toxins. Here the latter play the rôle of an exciting cause. We must always consider the underlying constitutional state on which the mental phenomena were grafted. The mental disturbances occurring in the thyroid persons and caused by dysthyroidism are on the same order as the phenomena in typhoid fever, in post-puerperal states, in pneumonia or other infectious processes, in toxemias from any source, etc. The main feature is a confusional state with or without delirium or hallucinations. They are characteristic of all toxi-infectious states from any cause whatever. That is the main condition that we observe in cases of dysthyroidism.

In connection with this, I may mention a fact which I have observed, namely: that thyroid extract administered to well individuals may produce symptoms of a toxi-infectious character. A woman who was treated by me for obesity with small doses of thyroid extract developed in a few days a confusional delirium, which eventually cleared up after the suspension of the drug.

Dr. Albert E. Roussel (Philadelphia): At the last meeting of the Medical Society of the State of Pennsylvania held in Philadelphia, I took occasion to point out that in a number of cases which had presented themselves to us for examination at the Medical Advisory Board, there were found a rapid pulse, tremor, etc., due to the surreptitious use of thyroid extract. The symptoms were so marked that, after a certain period of time, these cases were entered in our wards, where, after twenty-four or thirty-six hours, these symptoms entirely disappeared. In one instance, a man was detected taking thyroid extract. I make these points because, in one of the ward cases, the man undoubtedly had emotional delirium which lasted for a certain period of time.

I should like to ask the author of the paper whether any basal metabolism studies were made in these particular cases. We should understand that in toxic goitre, this is the most important test—probably of more value than all the other tests put together, and often in evidence before exaphthalmos develops or the visible changes in the gland appear.

To go further, we should have to assume that all cases in Kirkbride's are due to dysfunction of the thyroid gland. The conclusions of the author, though interesting, are, I think, rather dangerous ones to present at a meeting like this and be accepted. If we have to assume that disturbances of the thyroid are generally attended with as marked mental phenomena as those recorded in this paper, we shall certainly, in my opinion, go wrong.

Dr. J. Allen Jackson (Danville): One of the most interesting things about these cases is that they never reach the point of necessitating their admission to hospitals for mental diseases. I base this assertion on the fact that the State Hospital for Insane, at Danville, Pa., is situated in what is known as a thyroid belt, and seldom do we see admitted a case of true hyperthyroidism. Therefore, there seem to be two distinct types of thyroid disfunction: (1) those causing toxemia and producing symptoms of psychoneurosis; (2) those with enlargement of the thyroid, without involvement of the nervous system.

During the past two years, at the State Hospital, with an annual admission rate of over three hundred cases of mental patients, we have observed in this number only one case which we regarded as hyperthyroidism. This patient, a woman, died two days after admission. We did note, however, quite a number of cases of true adenomatous condition of the thyroid, which bore no relation to the psychosis. This is further borne out by a recent survey of the female population in the hospital, in which we found about one in thirty female patients with this typical adenomatous type of goitre. We are of the opinion that the goitre had nothing to do with the patients' psychosis, as analysis of the cases revealed this condition proportionately distributed in all the psychoses. Hyperthyroidism comes particularly within the sphere of the general practitioner.

Dr. S. Solis-Cohen (Philadelphia): There can hardly be a doubt in the mind of anyone who has observed a large number of cases of Grave's disorder that mental disturbance is often associated therewith. It may be coincidental, or there may be a causative relation; one must study each case on its own merits. Sometimes the earliest manifestation of an as yet undeveloped Grave's disorder is to be found in the psychic realm. I use the term in a very broad way, not as meaning a definite syndrome (dementia præcox or anything else with a distinctive label), but in the sense that the patient presents an unbalanced or precariously balanced psyche, is easily disturbed intellectually, and is emotionally depressed or excited by trivial matters; just as in all the disorders associated with an irregular action of the automatic sympathetic nervous system, there is an excessive and sometimes perverted response to stimuli in general, and especially to those that we call emotional. I am accustomed to speak of such persons as breeding Grave's syndrome, and the gestation may often be interrupted and frustrated by proper treatment. This condition is most frequently found in those patients who themselves present, or in whose families are found those general signs of autonomic-endocrine imbalance or instability or erethism that I have so frequently described during the last thirty years. It is not the mere "irritability" or "touchiness" associated with so many kinds of physical, as well as mental disturbances. It is a peculiar excitability, and of the order that when carried to its nth power, would present an acute mania.

The very case of Grave's disease that I saw, occurring in the practice of my preceptor, when I was a first-year student, impressed on my mind this connection. The patient was a woman of refinement and good breeding, who had suffered from Grave's disease for some time before consulting my preceptor. She was then in this peculiarly excited psychic state, and it did go on to the production of mania. The mania disappeared when the Grave's disorder was cured, or, at least, when the patient recovered therefrom. We need to consider spontaneous recovery almost the rule; but in the case under consideration, we justly, I think, attributed it to rest, with dietetic and medicinal aid.

Some time ago I exhibited to my class at the Jefferson Hospital a man who had been suffering from Grave's disorder and had been skillfully operated on by a well-known surgeon in a western state. A small portion only of the thyroid had been left—not enough, in my judgment, even if functioning excessively, to account for excessive and perverted activity in the nervous and mental system (psychoneurosis, I think, is the word) years after the thyroidectomy. The thyroid was gone. The Grave's disorder persisted.

The question is thus, as to what we are to consider the effective cause of this excitement or excitement alternating with depression, so characteristic of Grave's disorder. Is it the result of thyroid intoxication? Or is it an unrelated accompaniment of thyroid disorder? Or is it a concomitant disturbance? In other words, have we not here two branches of the one trunk? I am inclined more and more to that opinion. These mental disturbances that so often come into the picture of exophthalmic goitre, sometimes in the foreground, sometimes in the background, sometimes vivid, sometimes blurred, and which may even persist after the goitre has been removed and there can be no thyroid intoxication, surely indicate that Grave's disorder depends upon some profound original disturbance of the autonomic nervous system, of which the emotional upset and the thyroid change are independent, but not disconnected, manifestations.

Dr. Weinberg (in closing): It is impossible to take up all the points brought out in the discussion. I only wish to say that by careful clinical observation we can study cause and effect. I have not cited the cases, because I did not have time. I will just say this: When an individual is lying in bed and crying like a baby for fifteen minutes and repeating this several times a day; and when after treatment with rest in bed, his thyroid is operated on, and he can go back to his work, that of a railroad conductor, which he could not do for six years previously, I think that this pretty well establishes the link in the chain that was pointed out as missing.

We have done metabolic studies in some of the cases cited in the paper, in which the sugar tolerance test gave the typical thyroid curve. We have, however, depended mainly on clinical observation.

The point I wanted to make was not that all hyperthyroid patients were insane, nor that all the cases in Kirkbride's were due to hyperthyroidism. I merely wished to emphasize that we should not err by looking for the classical symptoms of thyroidism, as they are generally known, and thus overlook some valuable criteria that appear before these symptoms. I said that the mental reaction depends on the type of individual he was further back. If he had a tendency toward dementia præcox, this disorder might be induced; if a manic-depressive type, he will react in his own peculiar way to this toxic condition.

I agree with Dr. Winkleman about the possibility of the effort syndrome cases being hyperthyroid cases. I am doing studies in Pittsburgh to determine this particular point.

I merely wish to emphasize again that the thyroid may not be definitely enlarged for you to see it. You cannot tell what has happened; it may have been enlarged and then become fibrous. Do not look for one particular thing—bulging eyes, an immense thyroid, or absolutely definite heart symptoms. I tried to bring out the fact that you can study these cases from the mental angle, as well as the physical; and that the mental symptoms usually come first.

THE CIRCULATORY EFFICIENCY IN CARDIAC DISEASE*†

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PHILADELPHIA

Before proceeding to a discussion of the efficiency of the circulation in cardiac disease, it would seem worth while to consider briefly a few of the factors concerned in the regulation of the circulation in health.

The most conspicuous function of the circulation is the part it plays in bringing oxygen to the tissues and disposing of carbon dioxide. More than momentary failure to perform this duty is incompatible with life. The blood carries but little reserve oxygen and the body is unable to tolerate much accumulation of carbon dioxide. Consequently, exercise with its increased consumption of oxygen and increased formation of carbon dioxide, is limited by the efficiency of the circulation in effecting gaseous interchange.

It has been found that as the rate of metabolism, as measured by oxygen consumption, is increased by moderate work, alveolar ventilation and cardiac output are increased in a direct linear relationship. But in severe work this relationship no longer holds, since the heart is unable to increase its output enough to maintain it.

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The normal cardiac output at rest is about three to five litres per minute. Probably none but trained athletes are able to increase it to more than twenty litres. Though the cardiac output may be increased only four or fivefold, it is easily possible to work at such a rate that the oxygen consumption (metabolism) is increased tenfold or even more. This raises the question how metabolism can be increased two or possibly three times as much as cardiac output. It is accomplished mainly by (1) change in the distribution of the blood, (2) disproportionate increase in respiration, and (3) increased abstraction of oxygen from the blood.

Change in the distribution of the blood: Although the cardiac output may be increased only four or fivefold, it has been found that the blood flow through muscles may be increased six or eightfold. This is supposed to be brought about mainly by constriction of splanchnic vessels, increased blood pressure and dilatation of the arteries and capillaries in the active muscles.

Disproportionate increase in respiration: When the ratio of metabolism to cardiac output is greatly increased, there tends to be a great increase of carbon dioxide in the venous blood and tissues. Lactic acid is also found in the blood in appreciable amounts. The accumulation of these substances would disturb the acid-base equilibrium of the blood. Lactic acid, being nonvolatile cannot be disposed of quickly and unites with the alkaline bases of the blood. Consequently, the hydrogen ion concentration of the blood must be maintained by the removal of carbon dioxide. This is done by the respiratory center which is extremely sensitive to acids. Thus there is a tremendous increase in lung ventilation which lowers the alveolar carbon dioxide content and favors the rapid transfer of excess carbon dioxide from the blood.

Increased abstraction of oxygen from the blood: During rest, when the blood leaves the lungs, the hemoglobin is practically saturated with oxygen. Perhaps one-fourth of this oxygen is utilized as the blood passes through the tissues. In severe work the supply of oxygen to the blood is usually fairly complete because of the greatly increased lung ventilation. The important factor in addition to increased blood flow in increasing oxygen supply to the tissues is the abstraction of more oxygen from the hemoglobin. In anemia it has been shown that nearly all the oxygen may be abstracted. In normal persons, probably as much as three-fourths can be utilized. This is the process by which oxygen supply can be increased out of proportion to blood flow.

The work of the heart: In the final analysis, the physical efficiency of an individual depends on the ability of his heart to increase its output. The more quickly it fails, the more quickly must the compensatory mechanisms just mentioned be called into play and the limits of exertion tolerance be reached.

To increase the cardiac output, it is first essential that venous return be increased. This is accomplished by the contraction of muscles forcing blood back toward the heart and increased pumping efficiency of the respiration during hyperpnea. Ventricular outflow is adjusted to increased venous return by increase of cardiac rate or output per beat or, more often, both.

Bainbridge[1] states that the greater frequency of the pulse throughout a period of exercise is due to three factors: the first is a continued outflow of impulses from the higher centers to the vagus center, the second (most important) is reflex decrease of vagal tone and increase of accelerator tone induced by distention of the heart, and the third is rise in the temperature of the body. Cardiac output normally reaches its maximum with a rate of 150 to 160 beats per minute, when venous return is increased and ventricular filling consequently accelerated. But more rapid rates interfere with ventricular filling and cause decrease in output.

The ability of the heart to increase its output per beat depends on the mass of the cardiac muscle and the state of its nutrition. According to Bainbridge,[1] other things being equal, a heart will contract in proportion to the number and size of its fibres. The state of their nutrition is not so easily measured but probably influences contractile power even more. The method by which strength of contraction is augmented is mainly by increase in length and, according to Wiggers,[2] increase in the initial tension or the amount of stretching of the fibers just before systole.

It has been pretty conclusively demonstrated, particularly by Starling[3] and his coworkers that dilatation of the heart up to the limits of the pericardium increases its effectiveness tremendously. Other things being equal, more energy is developed, contraction is more vigorous and muscular efficiency is increased. Physiologic dilatation is apparently a truly compensatory process that develops when the heart is inadequate to meet the demands made on it, either by increased venous inflow or arterial resistance.

Under such circumstances, at the end of each systole there is an increment of blood left within the ventricle to which is added the next diastolic inflow. Thus the heart keeps on increasing in size and consequently in the efficiency of its systole until an equilibrium between inflow and output is established.

Elevation of the blood pressure is also an important factor in raising cardiac output to a high level. Increased cardiac output tends to raise blood pressure. Increased blood pressure is important in providing more abundant blood flow through the coronary arteries, which in turn is essential to increased cardiac work. Thus there is a mutually dependent relationship among these processes.

Coördination of mechanisms: In order to attain the highest physical efficiency not only must the heart, the blood vessels, the respiratory apparatus and the muscles function smoothly but there must be a perfect coördination among these mechanisms. The nervous system must play its part not only so far as the reflex activities are concerned, but the mental state is also important. It is well known to athletic trainers that determination may enable a physically inferior athlete to win his contest. Trained athletes comparatively seldom collapse during their events but they frequently do just as they cross the finish line. The possible influences of nervous and mental factors should not be neglected in evaluating circulatory efficiency.

Causes of diminished cardiac adequacy: The principal causes of diminished cardiac adequacy are: (1) decreased contractile power of the myocardium, (2) anatomical defects in the heart interfering with the onward course of the blood, and (3) disturbances in cardiac rate or rhythm. All of these causes may operate together. A familiar example is seen in those cases with a combination of myocardial disease, mitral stenosis and auricular fibrillation.

It is the fashion at present to insist that the myocardium is all-important in respect of cardiac function. But in this insistence we are liable to forget the fact that other conditions may also profoundly affect cardiac function. Recently the possible effect of valvular obstruction on function was illustrated in a patient on Dr. Stengel's service in the University Hospital.

A man about forty years old applied to the Cardiovascular Clinic for treatment. He was found to have moderate decompensation with a markedly enlarged heart, loud systolic and soft evanescent diastolic murmurs at the apex, a few râles at the bases of his lungs and moderate edema of the legs. He did not improve under treatment and was referred to the ward, where he grew slowly but steadily worse, and after several months died. Clinically, myocardial disease seemed the most prominent feature. He was thought to have mitral regurgitation but the presence of stenosis was considered doubtful. At autopsy the mitral orifice was found so stenosed that there was only a narrow slit for the blood to pass through.

It would be difficult to conceive how even the strongest heart muscle could have continued to pump sufficient blood through a mitral orifice such as this patient had. While such tremendous mechanical disadvantage is comparatively seldom seen, nevertheless it would seem unwise to disregard such handicaps to the heart as leaking or obstructed valves.

There is comparatively little known regarding the effects of abnormal rates and rhythms on cardiac efficiency. There can be no doubt that a continued rapid ventricular rate has a profound effect on the contractile power of the myocardium. This is particularly well seen in paroxysmal tachycardia in which acute decompensation may quickly come and go with the paroxysm. It is well recognized that *pulsus alternans,* an expression of depressed contractility, is particularly prone to develop when the ventricular rate is rapid.

The effect of slow rates on the cardiac output may also be profound. In heart block this is too obvious to need comment. But simple bradycardia may limit the cardiac efficiency.

A college football player and track athlete who apparently had been in excellent health but not in training, suddenly felt weak and faint after finishing a heat in the sprints. That evening he could not dance without distress. He continued to feel bad on exertion and a couple of days later came to the hospital. On admission, his pulse rate was 40. At first he was thought to have sino-auricular block, but subsequent studies showed the condition to be a simple bradycardia. He was kept under observation for two weeks, his physical condition gradually improved and his heart rate recovered to an average of about 55. About three months later he was seen again and his rate was 56. After a severe stair-climbing test his rate did not go above 108, in one minute had returned to 66, and in two minutes to 54. His heart was perceptibly dilated after the exercise and his tolerance was not good enough to make him a very promising candidate for a football team.

Without going into any discussion of the cause of this patient's bradycardia or whether his heart was "strained," our observations seemed to us to indicate that the bradycardia itself was an important factor in limiting cardiac efficiency.

Of the commoner abnormal rhythms, sinus arrhythmia and extrasystoles are of trifling importance so far as their effects on cardiac output are concerned. With the inception of auricular fibrillation or flutter, rapid cardiac failure is commonly seen but it would be difficult to say how much of this is due to the increased rate and how much to the abnormal rhythm. Most of these patients show marked improvement as soon as the rate is controlled in spite of the persistence of fibrillation or flutter. But there is some evidence that fibrillation itself, independently of rate may decrease cardiac efficiency by as much as 35 per cent.[4]

The effects of cardiac inadequacy: No one should have any trouble in recognizing cardiac decompensation. But how is the question of cardiac function to be decided in those groups of patients who, while comfortable enough under easy circumstances, do not bear exertion nor the strains of life well or who present signs of heart disease without clear-cut symptoms?

The crucial test of the heart comes when loads are placed on it. Of these the most important are the strains of daily physical and mental activities. These strains vary according to occupation and temperatment. In some the load is almost purely physical and has to be met by increased cardiac output; in others it is largely mental and the heart may suffer because of disturbance of the nervous apparatus controlling the intricate circulatory mechanism. Another type of load is that produced by brief periods of more or less strenuous physical effort. The heart's reaction to such a burden depends on its ability to increase output of blood commensurate with the rate of metabolism brought about by the exertion. Most of the so-called tests of cardiac function are based on studies of the effect of this type of cardiac load.

It is essential to discover as far as possible the response of the heart to both the habitual and unusual strains imposed on it. To get light on this subject, the symptomatology must be carefully inquired into, particularly the sensations evoked by the patient's various activities. The details of daily life, occupation, diet, habits, environment and temperament may be very important. A careful and complete examination should be made, not only of the heart but of the entire body, paying particular attention to the condition of the arteries, kidneys, lungs and thyroid gland and the possibility of infection anywhere in the body. Not only are careful clinical studies necessary to establish the presence of diminished cardiac function but to rule out other processes which, by attacking the circulatory apparatus at some other point, might produce a clinical picture not dissimilar to that of heart disease. Moreover, chronic diseases rarely confine their effects to one place in the body. This is particularly true of heart disease, which is almost always caused by disease arising elsewhere in the body and in turn is liable to give rise to widespread disturbances. In disease the cardiac function is bound up more or less intimately with the other body functions.

The so-called cardiac functional tests have a distinct place in the study of heart disease, but not the exaggerated importance which some would attribute to them. Those based on short periods of exercise merely demonstrate whether the heart is able to work hard for a brief period of time. It is true that as a rule this corresponds roughly with the ability to work at a lower level for a long time. But there are exceptions, as is seen in a patient I have had under observation for years, who is unable to run up two flights of stairs without distress but can play two or even three rounds of golf a day with ease.

From such considerations, it seems unlikely that the ideal test of cardiac function for which some are seeking will be found, at least along the present lines of research. Even in health, where the problems are relatively simple, some excel in the brief strenuous tests while others show their superiority in endurance. But in disease where conditions are infinitely more complicated, it seems too much to expect that single tests of function will be adequate. But they have real value, considered in conjunction with the other findings.

Of the various exercise tests, stair-climbing seems to me more satisfactory than any of the others. It is certainly better for the general run of patients than hopping, lifting dumb bells or bicycle ergometry. The amount and speed of work can be controlled accurately enough. Everyone's muscles are trained to climb stairs; the patient is working against the physical handicap, whatever it may be, that he always carries with him, and in addition no special apparatus is required. The observer can easily train himself to note the tolerance to exercise and after its cessation the visible evidences of distress, the degree and persistence of dyspnea, the behavior of the cardiac rate, the presence or absence of tumultuous cardiac action and the position of the apex beat. Such observations will give a far more accurate indication of the cardiac response than the questionable practice of limiting the attention to any single post-exercise phenomenon, since the reactions to exercise of different individuals vary in different ways.

The question of the importance of cardiographic methods in estimating the cardiac function is sometimes raised. Their value, great as it is, in the study of cardiac disease, does not lie in this direction. It is true that inferential evidence as to cardiac function may sometimes be obtained from electrocardiograms or polygrams, but so far as my experience goes, such evidence is inferior to that which may be discovered by clinical study.

Even though we may be able to arrive at a fairly satisfactory estimate of the cardiac function, this by no means solves the clinician's problem. If there is present a pathologic process affecting the heart, the functional capacity of the organ will probably be greatly altered with the progress of the disease. Thus, in attempting to arrive at a prognosis, function is to be interpreted in the light of pathology.

SUMMARY

The chief work of the circulation is to act as a transportation system for the metabolism. It is carried on by delicate coördination of a number of complex mechanisms. These are able to compensate for each other within certain limits but each is indispensable. To attain the highest circulatory efficiency, all must function well.

In cardiac disease, the effect on circulatory efficiency depends mainly on the degree of impairment of the cardiac function.

The cardiac function is impaired not only by myocardial weakness but also by certain disturbances of rate or rhythm or by valvular defects.

To evaluate the cardiac function, it is necessary to consider how efficiently the circulation performs under the stresses of every-day life as well as special loads. The possible effects of disease outside the heart which may influence circulatory function must be weighed. It may be misleading to form an opinion of cardiac function based on a single type of test, or worse still, on only one of the reactions to such a test. In the absence of a satisfactory test, all the available data must be taken into account.

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DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh): I feel very inadequate indeed to discuss this paper. Dr. Wolferth has very ably described the problems that confront us, and I believe that most of those problems cannot be solved at present. Any man who seriously and conscientiously works toward the development of a method of measuring the cardiac efficiency is entitled to our respect and gratitude. So many of the conditions are so variable that it seems almost hopeless to attack the problem from a practical clinical standpoint.

One of the last points that Dr. Wolferth mentioned affects the evolution of the dilatation of the heart after exercise. It seems to me that it is very doubtful whether the location of the apex beat, as determined by palpation can give us reliable data. If you consider that the distance from the median line to the apex depends on the level of the diaphragm, which may be greatly modified after exercise by the respiratory changes that have taken place in consequence of the exercise, and the fact that the respiratory rate remains high for some time and the level of the diaphragm may be continuously higher or may swing with wider swings, you can see how difficult it must be to estimate the relative size of the heart, before and after exercise, by this method. Furthermore the size of the heart is very important in considering the question of prognosis, but the prognosis depends so much on how the patient is going to fill his life from the time of examination on. What is he going to do with his heart? What might he do with it? How many children must he support? What kind of food is he getting? What is his blood picture? What is the condition of the blood-forming organs that will nourish the heart and keep up its efficiency?

I think that Dr. Wolferth has made a good argument for stair-climbing. It is an exercise that we all have to do, more or less. It requires no training, and the person does not have to try it two or three times first, to see what he can do, as he must with the spirometer. Personally, I like the Barringer test also. I feel that a primary fall, followed by a rise in blood pressure, instead of an immediate rise, after exercise, gives a little information in these cases, which stair-climbing does not give. Possibly because I am more fortunate in my choice of the amount of exercise I give my patients in the office than I am in the amount of stair-climbing I give them, although I think that both tests are very valuable, I prefer the Barringer.

The weight of the patient has a great deal to do with the prognosis; and not only the mental attitude, but the will power and the character of the patient are important factors in keeping the weight from rising too much or in making it rise to the most favorable point.

The question of nutrition, water balance, etc., is also important, in relation to the mass volume of the blood and the amount of plasma. Many plethoric patients with red puffy faces, etc., may have a mass volume below normal.

The question of how long the heart is going to last depends on how the patient can be directed and whether the patient needs to change his occupation or not, going back to how well you can size the thing up, after putting the patient through all the tests you know of and gathering all the information you can.

Dr. Wolferth (in closing): I think, Mr. Chairman, that Dr. Litchfield has very ably indicated the type of problems that should interest those who are working on the subject of heart disease. I do not find anything in his discussion to disagree with. I hope I did not give the impression that I was condemning the Barringer test; because what I was attempting to do was to emphasize the importance of collecting all the evidence that can be brought to bear, to reach a diagnosis. In our present state of knowledge, all that can be obtained is quite welcome.

CAUSES AND DIAGNOSIS OF VARIOUS FORMS OF COMA

The study made by Blair Holcomb, Portland, Ore. (*Journal A. M. A.*, Dec. 31, 1921), of 346 deaths confirms the conclusions arrived at in previous reports—that the accuracy of the clinical diagnosis does not improve with lengthened observation but rather declines up to the fifth day and then slowly rises.

SELECTIONS

A CASE OF BICHLORIDE OF MERCURY POISONING

ADELAIDE ELLSWORTH, M.D.
WARREN

On March 10th, at 10 p.m., the patient, a woman aged 30, took with suicidal intent 120 c.c. of a solution of bichloride of mercury containing four grams of the salt. She was seen shortly afterward by a physician but prior to this the patient had vomited freely. The stomach was washed out with four liters of warm water, and half a liter of milk with the whites of two eggs were poured into the stomach. This mixture was vomited almost as soon as the stomach tube was withdrawn. There was no blood or bile in the vomitus. The mouth and pharynx showed nothing abnormal. There was no swelling, edema or erosion. Retching and vomiting continued and about fifty c.c. of bile mixed with blood-streaked mucus was ejected. The pulse decreased in volume and became rapid and weak. The skin was pale and slightly moist—in short the patient was rapidly passing into a state of complete collapse. Three-tenths gram of calcium sulphide boiled in 150 c.c. of distilled water and filtered was given intravenously and the usual remedies applied for shock.

The quantity of bichloride taken was not known at this time and the rule of Wilms that for each grain of bichloride taken, a grain of calcium sulphide dissolved in an ounce of water should be given intravenously, could not be applied. In view of the fact that the patient vomited almost at once after swallowing the solution, it was assumed that only a small portion could have remained or been absorbed.

March 11. Temperature, 100; pulse, 105; respirations, 22. The patient had a fairly comfortable night and slept at intervals. She complained of pain over the entire abdomen. The mouth and pharynx showed nothing abnormal. The pulse continued weak and rapid. During 24 hours the patient was given and retained 500 c.c. of milk, 1,000 c.c. of water and 500 c.c. of coffee. At 5 p.m she vomited 150 c.c. of dark red mucus; at noon, 60 c.c. of brownish mucus, and at 7 p.m., 50 c.c. of similar material.

In 24 hours there were five small (30 to 50 c.c.) liquid, blood streaked, mucus stools.

At 11 a.m. 0.3 gram of calcium sulphide in 150 c.c. of water was given intravenously and at 12, 2, 4, 6 and 8 p.m. 0.15 gram of the same salt was given by mouth.

Blood: uric acid, 5; urea N., 90; creatinin, 1.4; glucose, 120 mgs. per 100 c.c.; red cells, 5,000,000; white cells, 10,600; polynuclears, 90 per cent.

Urine: 900 c.c.; sp. gr. 1.010; acid; deep yellow color; heavy ring of albumin; no glucose and numerous hyaline, granular and epithelial casts.

March 12. Temperature, 99; pulse, 96; respirations, 22. Patient slept five to six hours and rested comfortably. No soreness of mouth or pharynx present. Abdomen still very tender. At 2 p.m. vomited 50 c.c. of bile-stained mucus. No further vomiting, but at noon complained of nausea. She drank water freely and was given milk and ice cream, both of which she retained. In 24 hours there were two soft, blood-free stools. At 11 a.m she was given 0.15 gram of calcium sulphide in 150 c.c. of water intravenously and at 6 p.m. 5 grams of sodium bicarbonate in 250 c.c. of water were given by the same route.

Blood: uric acid, 5; urea N., 50; creatinin, 1.5; glucose, 110 mgs. per 100 c.c.

Urine: 1,000 c.c.; sp. gr. 1.022; acid; very heavy ring of albumin; no glucose; very numerous epithelial and granular casts; many red cells present.

March 13. Temperature, 98; pulse, 88; respirations, 18. The patient slept six hours; slight tenderness over abdomen. Was given broth, milk and ice cream. No nausea or vomiting; no soreness of mouth; no diarrhea, and stools were blood-free. At 3 p.m. was given 5 grams of sodium bicarbonate intravenously.

Blood: uric acid, 3.8; urea N., 22; creatinin, 1.5; glucose, 100 mgs. per 100 c.c.

Urine: 1,100 c.c.; sp. gr. 1.020; acid; very heavy ring of albumin; no glucose; sediment same as on 12th.

March 14. Temperature, 99; pulse, 80; respirations, 18. Patient slept six to eight hours; soreness over abdomen almost entirely gone. Was given milk toast, broth, milk and ice cream. Stools blood-free. No soreness of mouth. Five grams of sodium bicarbonate intravenously.

Blood: uric acid, 2.6; urea N., 15; creatinin, 1.4; glucose, 104 mgs. per 100 c.c.

Urine: 1,200 c.c.; sp. gr. 1.019; acid; heavy ring of albumin; no glucose, fewer casts and no red cells in sediment. Many cells apparently from renal pelvis in sediment.

March 15. Temperature, 98; pulse, 74; respirations, 18. Patient slept soundly; soreness had disappeared from abdomen; no subjective complaints; drank water freely.

Blood: uric acid, 2.6; urea N., 15; creatinin, 1.4; glucose, 104 mgs. per 100 c.c.

Urine: 1,400 c.c.; sp. gr. 1.012; acid; faint ring of albumin; no glucose; few granular and epithelial casts.

March 16. Blood: uric acid, 2.6; urea N., 16; creatinin, 1.4; glucose, 105 mgs. per 100 c.c.

Urine: 1,500 c.c.; sp. gr. 1.020; acid; very faint ring of albumin; no glucose; few granular and epithelial casts.

The quantity of urine from the sixteenth on was never less than 1,500 c.c. and increased with the fluid intake. The albumin became less and none was found after the twentieth. No casts were found after the twenty-first.

The patient made an uneventful recovery.

PREVENTION OF MENTAL DISEASE*

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The problem of prevention of mental diseases is analogous to that of infectious diseases, but it is decidedly more complex. In a certain number, however, the causes are as definite as in bacterial diseases. For example, in paresis, the condition is due to syphilis, and syphilis is preventable. In the largest majority of cases the etiological factors are not well understood. In spite of it a good many factors are contributory, directly or indirectly, to the causation of mental diseases. Infectious diseases are the direct cause of certain types of mental affections. Typhoid fever, measles, influenza, septic conditions, malaria and other infectious processes, are all capable of producing primarily or in a contributory manner a few pathological mental processes, such as confusion, delirious states or stuporous conditions. Prevention of these mental states is in direct relation to the prevention of the infectious diseases themselves. As to the mechanism of production of the morbid mental processes, one may find some explanation in the experimental work which tends to show that a high temperature has a disastrous effect on the nerve cells, either through their disturbed oxygen metabolism or through coagulation of globulins and proteins of protoplasm; also through the presence of toxins around the cells.

Among the febrile processes coincident with infectious diseases, *influenza* deserves special mention. It is one of the most frequent processes which not infrequently, after the acute phase has subsided, produces profound disturbances in the higher functions of the brain. The intensity of the mental phenomena, as well as their curability, depends upon whether or not the individuals suffering from it present a previous history of psychopathic traits. The psychoses encountered in this disease are: (a) a profound confusional state with delusions and hallucinations; (b) a confusional state without hallucinations but with illusional conceptions; (c) cerebral asthenia with conspicuous amnesic phenomena. It is a remarkable fact that in this affection, which is due to a toxi-infectious process, the amelioration in the mental condition runs parallel with the improvement in the general physical state of health. Hence the preventive measures are clearly indicated.

Syphilis plays a very potent rôle in mental disturbances. Mental deficiency, epilepsy, are not infrequently due to congenital syphilis as evidenced by biological investigations. If we consider further its effect on the central nervous system with the result of very many cases of locomotor ataxia, paresis, specific headaches, specific palsies of central or peripheral nature even as far as the third and fourth generations, also various manifestations simulating the classical psychoses, we are bound to admit the tremendously deleterious effect of syphilis and consequently the very large scope for preventive measures.

Tuberculosis is another affection which belongs to the preventable category. It is a toxi-infectious process of a chronic character which exercises a profound influence on the intellectual and affective spheres. Tuberculosis may produce inflammatory lesions of the cerebrum directly, or else may produce changes in the cortical cells through the toxins.

The mental phenomena consist of general enfeeblement of intelligence, of changes in the affections, of changes in the disposition, of vague ideas of a mild delusional character and of changes of conduct. When the intoxication is more profound one observes psychotic disorders of a more serious character, namely, cloudiness of intellect and of consciousness, confusional states with hallucinations mostly visual, amnesia. Delirium or stuporous states or else depression are met with in another group of cases. Finally, the well-known polyneuritic syndrome is encountered in advanced periods of the tubercular process.

Clinical, anatomical, and experimental evidence points to the fact that tubercular lesions must necessarily lead to the possibility of secondary tubercular involvement of the cerebrum and thus produce psychic disturbances of a serious character. The knowledge of such a possibility is a sufficient indication for careful and repeated examinations by all possible methods for tuberculosis, and thus by checking its spread, for prevention of mental derangement.

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*Abstract of an address delivered before the South Branch of the Philadelphia County Medical Society, December 23, 1921.

Besides the microbic diseases which may give rise to mental disorders, let us consider briefly toxic conditions from other sources which may lead to mental derangement. *Alcohol* stands in the first place and is conspicuous with its effect on individuals and races. It has been proved repeatedly and in most incontrovertible manner that its effect on the nervous system and on the intellectual processes is great, and still greater upon individuals sprung from neurotic stock, thus constituting a strong predisposing factor to insanities. In alcoholism we find a progressive tendency to mental and bodily degeneration, and in the offspring a tendency to all varieties of mental defects. If alcoholism is an acquired habit in a very large number of cases, a habit which is at first developed from social and business reasons, so that the individual eventually becomes a slave to it, prophylaxis can be easily practiced and carried out. Sometimes alcoholism may be but an early symptom of an acute mental affection. It is also well known that alcohol has a very unfavorable effect on all varieties of mental diseases. It is therefore evident on what lines our preventive activity is to be carried out.

Opium, Cocaine, Heroin are other external factors which are capable of causing mental derangement or mental and moral degeneration. Literature is abundant with examples of the most deteriorating effect of these drugs on physical and mental health. Prophylaxis in such cases must be directed not only on legal grounds, but also and perhaps more persistently on the victim's constitutional make-up, which through an inherent weakness allowed itself to become a prey of habit.

Having considered exogenous factors causative of mental affections, let us briefly mention the endogenous factors, namely, those which originate within the organism as a consequence of physical affections, or by internal secretions. Disturbed metabolism, having its origin in the gastro-intestinal canal or in various viscera or else in the endocrinic organs, is not infrequently the direct cause of mental disturbances. Much work has been done lately in that direction, based chiefly upon *post hoc ergo propter hoc.* Empirical removal of certain local infections of organs, followed by a certain amount of improvement in the preëxisting mental disorder, prompted some investigators to view the latter as the direct results of the former. In spite of these numerous theories and apparent proofs, much actual demonstration of this contention remains yet to be brought forth. On the other hand, if in a few cases the results of such procedures have been seemingly beneficial, one must not neglect to follow this line of investigation of preventive and curative medicine.

In considering the causes of mental disturbances and their prevention one must not ignore another causative factor which, if known, will give direct indications for proper prophylactic measures. I mean cranial injuries. Not infrequently we meet with cases in which an obscure and diffuse mental disorder followed a fracture of the skull or hemorrhage. In this respect protection of employees in factories, in industrial centers, in railways or in other directions in which the worker is exposed readily to traumata, prophylactic measures should be regulated and enforced.

There is another variety of causes of insanity besides those described above, namely, purely psychical causes, the impetus to which was given by Freud and his disciples. Without going into details of the psychoanalytic teaching with its views concerning repression, dissociation, censors, conversion, etc., it is sufficient to mention that in the morbid phenomena to which the psychoanalytical methods are applicable, one finds fundamentally a fight between phantasy and reality. The phantasy is a source of pleasure. That it represents an imaginary gratification of repressed desires is the chief contention. Without recognizing the necessity of finding in all cases a sexual basis for many abnormal mental manifestations and without accepting Freud's teaching *in toto,* psychoanalysis rendered this service; it showed how important is a careful training and the proper choice of environment, and how necessary it is on the part of parents and educators to place themselves in the closest understanding and sympathy with those in their charge; also how urgent it is to insist upon frank and undisguised relations to each other. Only in such cases neurotic or psychotic manifestations with their serious consequences can be avoided.

At this juncture it would not be amiss to call attention to some exciting causes of mental derangement, which in the midst of the great strain in which we live, confront us daily. Disappointments, shocks of any character are very frequently the immediate exciting factors of a mental disorder. Unemployment, privation, undernourishment, overwork, continuous worry, are all well-known factors in mental disturbances. Excesses of all sorts leading to exhaustion, are another immediate factor in the onset of mental disturbances. It is to be borne in mind that the last group of causative factors can commence a mental affection only on one condition, that the individual living under that stress is apt or predisposed to break down more readily than others. This is possible in individuals, who through hereditary transmissions of morbid characteristics, are prepared at one time or another, and mostly in early life, to succumb under trying circumstances. This leads us to the consideration of the problem of heredity which could be considered as the most prevalent of the predisposing elements in etiology of mental diseases.

The continuity of the germ-plasm is a conception which is pretty well adopted by most scientific investigators. The problem of inheritance of acquired characteristics is not accepted by all. To sum up the subject of inheritance, we may say that the individual invariably bears evidences of tendencies acquired through the germ-plasm of his parents, but also evidences of the influence of the environment.

With regard to mental disorders in connection with heredity, Mott has shown that the children with a tainted nervous heredity are affected much earlier in their life than their parents; on the average at one-half the age of the parents. In this proposition, if it is true, one can see an effort on the part of nature to eliminate bad stock, so that in several generations there may be a return to the normal. The Mendelian theory of inheritance is another important study in this respect. It is based on the view that certain unit-characters of the individual are represented in the germ-plasm by definite material entities called "determiners," and inheritance is dependent on the segregation and grouping of these determiners. Some of the latter are "dominant" and others "recessive." This theory, which at first was elaborated by Mendel on plants, has also been applied to mankind and eugenics may profit considerably from it. For example, in two parents, healthy themselves, but with a recessive determiner in one family, according to Mendel's calculations, in the resulting offspring there will be a certain proportion of diseased to healthy. On the other hand, if the healthy parents are free from tainted determiners, the family will be healthy.

It is, therefore, evident that all formulated laws of heredity have a considerable bearing on the race and should be taken into consideration in our attempts to prevent the propagation of unsound stock. Practical instruction should be given in schools and colleges, in societies and all kinds of associations, with regard to the essential and fundamental laws of heredity. A preventive campaign can accomplish results and bear fruit to a far greater extent than actual treatment of deficiencies and abnormalities.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

RECONSTRUCTION OF THE COMMON BILE DUCT

DR. J. P. GRIFFITH

Reconstruction of the common bile duct may be indicated as a result of stricture from long continued inflammation, with or without stones, or in the great majority of cases because of injury during cholecystectomy. In such cases the bile usually flows through an external fistula, and often the clinical picture of these patients is one of inflammation of the bile duct, characterized by chills and fever, and profound emaciation as a result of the continued infection.

In reconstructing the bile ducts, tissues that are accustomed to the presence of bile should be used and should include not merely the epithelial lining but the submucosa. The constriction does not take place in the epithelial lining but in the submucosa. Even though a tube of fascia by which the common duct is reconstructed may be lined with epithelium, in a short time the fascia itself reacts to the irritating effects of the bile and sooner or later complete occlusion occurs.

Of the methods used in reconstruction, the anastamosis of the hepatic duct into the duodenum is the most feasible when it can be done. The use of the straight tube as advised by Sullivan has proved satisfactory. The use of the T tube has been highly endorsed by Kehr and Bevan and is a most satisfactory procedure. It has the following distinct advantages: (a) Drainage of the upper biliary apparatus while the repair is going on below. This is most important, owing to the fact that most of these cases have a pronounced inflammation of the upper ducts. The bile will drain out the long arm of the T tube rather than go into the intestines. (b) The tube can be left in situ for months, if thought advisable. By clamping the long arm of the tube the bile will be forced to flow into the intestine, and vice versa.

CASE REPORT

Mrs. H., age 40 years, admitted to Mercy Hospital May 7, 1918, giving a history of having had elsewhere a cholecystectomy one year previously. Patient became jaundiced immediately after operation, and continued to have intermittent periods of jaundice, and bile drainage from a fistulous tract at site of operation. When the bile was draining she felt well, but when the tract would close, jaundice followed with pain in upper abdomen, vomiting, chills and fever. The stools at all times were clay colored.

She was operated May 9, 1918, at which time it was found that there was a complete obstruction of the common bile duct. The gall bladder had been removed. The common duct was greatly distended and was drained. Her convalescence of seven weeks was uneventful, and patient went home and attended to her household duties; her jaundice slowly cleared and she was free from pain. Her bile drainage, however, persisted.

About one year after her discharge from Mercy Hospital she began to have attacks of severe pain in her upper abdomen followed by chill and jaundice. These attacks lasted for several days and would recur about every month. They became more severe and more frequent until the patient was readmitted to Mercy Hospital on November 18, 1919.

At this time she complained of pain and tenderness in the right upper quadrant of the abdomen, and jaundice, which was extreme. The diagnosis on admission was obstruction of the common duct. The common duct was opened and a rubber tube introduced for drainage of bile. She remained in the hospital for six weeks and went home feeling very much improved.

Patient was free of symptoms for a year, when she again had cramp-like pain in the abdomen, which was associated with nausea, vomiting, clay-colored stools and a highly colored urine.

Admitted again October 17, 1921. Operation October 20, 1921. There was found a stricture of the common duct which had closed that channel. Firm fibrous adhesions extended throughout the entire extent of the duodenum to the edge of the liver. The stomach was so dilated and emptied with so great difficulty that a gastroenterostomy was considered, but not performed because of the increase of risk to the patient. The proximal end of the common duct was dilated and when opened was found to contain good clear bile. The distal end of the duct existed as a small stump attached to the pancreatic duct.

The common duct was approached through the old operative scar. The duodenum mobilized freely so that gas passed readily from the stomach into the small intestine. After quite a search through the dense adhesions around the common duct, the duct was found and isolated. The proximal end was opened and a T tube anchored into it with No. 1 plain catgut. The other end of the T tube was introduced into the duodenum through an incision about one-fourth inch long and sutured in place with catgut. Fatty tissue and peritoneum was sutured loosely around the T tube, which was brought out through the skin. Four cigarette tubes and one rubber tube were placed around the T tube. The patient's temperature was normal on the third day following operation.

The T tube was removed seven weeks after the operation, control of bile drainage was successfully carried out by clamping the tube for a day, which always showed bile in the stool.

Patient discharged December 17, 1921, with wound healed and bile draining into the duodenum.

Patient now well with normal colored stool and free from discomfort of any kind.

RHABDOMYOSARCOMA OF THE ORBIT WITH SECONDARY IN THE LUNG

DRS. SAMUEL R. HAYTHORN and EDWARD B. HECKEL

The case is of unusual interest for several reasons: Rhabdomyosarcomata arising in skeletal muscle and metastasizing to internal organs are extremely rare; the clinical history was unusually interesting and complete; the method of exenteration of the orbit was unusual; and the advantage of rapid fixation in Zenker's fluid and of special staining to determine the class of tumor, over the all too common method of poor fixation in alcohol or formalin of tissues which have lain for some hours around the operating room, was well illustrated.

Rhabdomyomata are of three classes: 1, pure rhabdomyomata of skeletal muscles; 2, rhabdomyomata of heart muscle; 3, mixed tumors containing embryonic striped muscle cells. Occurrence: 1. Usually congenital and located in uterus, kidney, testis, lung, etc. 2. May develop in striated muscle anywhere. Malignancy: 1. Pure rhabdomyomata usually grow by local extension, may recur, but rarely form metastases. 2. Mixed rhabdomyomata may develop malignant characteristics and metastasize, but the cells in the metastasis rarely develop crossed striæ.

History: The patient, nine years of age, was seen on October 2, 1912. He was said to have bumped himself against a fire escape on September 19, 1912. Since then right eye had been bulging some. Never noticed anything wrong before.

Examination showed right eye slightly displaced downward and outward, pupils equal and active. Ophthalmoscopic examination of the right eye showed the vein enlarged and the optic disc swollen, not unlike a choked disc. A neoplasm could be felt in the upper inner angle of the right orbit. The exophthalmometer showed an exophthalmus of the right eye of 3 m.m.

On October 22, 1912, he was sent to the Allegheny General Hospital, where a complete exenteration of the orbit was made.

Pathologic Report: Made by Dr. Frederick Prœscher. Diagnosis: Retrobulbar polymorphocellular sarcoma.

The specimen was fixed in formalin, mounted in gelatin and preserved as a museum specimen for seven years. Specimen opened by Dr. Haythorn with report as follows:

The specimen consisted of the right eye and a closely attached tumor mass. The surface of the mass was rough and slightly nodular, covered by adhesions. It measured 4x4x3.5 cm. and involved the muscular attachment of the superior and internal rectus muscles and probably a part of the levator palpebræ superioris. To the outside of the mass a portion of what was probably the superior oblique muscle was attached. The tumor mass and eye were bisected by a cut through the greatest convexity common both to the eye and the mass. It was found that the tumor was made up of white tissue which was firm and resembled fibrous tissue. It was definitely attached to the upper eyelid.

Further History: Patient was discharged from the hospital on January 22, 1913, in good physical condition, weight 56½ pounds. He returned in July, 1913, and on the 22d the orbit was thoroughly curetted.

Pathologic Report Second Operation: Material removed consisted of a number of pieces of soft, broken up, rather gelatinous appearing tissue. The largest piece was partially encapsulated and resembled uncooked fish in appearance. The tissue was fixed both in formalin and in Zenker's fluid and the diagnosis of sarcoma returned. Subsequently special stains were made on the material that had been fixed in Zenker's and the sections carefully studied. Numerous embryonic striped muscle cells were observed and a diagnosis of "rhabdomyosarcoma" returned.

Further History: The patient was again discharged but returned a second time in November, 1913. His general condition was good, his weight was 64 pounds, but there was recurrence of the neoplasm and a distinct bulging of the right orbit. No further surgical interference was done. The tumor increased in size, and the patient died on April 14, 1914.

Autopsy: Autopsy showed a recurrent rhabdomyosarcoma of the orbit with a metastasis in the lung, direct extensions to forehead, face, brain, right nasal cavity, pharynx, and to the frontal, ethmoidal, sphenoidal and maxillary bones. The lung nodule was 2½ cm. in diameter and situated subpleurally on the anterior surface of the upper lobe of the left lung. It was white at the periphery and soft reddish grey in the center.

Microscopic Examination: Microscropic examination was finally made on the primary tumor, after bits had been refixed in Zenker's fluid and it was found that the primary as well as the first and second recurrences contained embryonic cells with recognizable crossed striæ. The metastasis in the lung contained numerous cells which were shown to be striated muscle fibers but here the striæ were slightly more difficult to demonstrate.

BLASTOMYCOSIS

DRS. G. R. LACY and C. C. HARTMAN

In recent years there have been reports, with increasing frequency, of cases of blastomycosis. Particularly in and around Chicago the physicians have been alert to the presence of this disease in the United States and most of the cases reported have been recognized there. Reviews of several series have been published: Hektoen, Ormsby and Montgomery, Stober and others. In all they have reported thirty-six cases.

The disease is more common in early adult life. It occurs much more frequently in males than in females. It also affects most frequently those engaged in hard labor, particularly men of foreign birth who live in damp, poorly ventilated hovels under very poor hygienic conditions. There has been no evidence of contagion. Many instances have been noted where the portal of entry was an abrasion of the skin. Sometimes the organism, apparently gained entrance through the respiratory tract giving first evidence of infection in the lungs. Invasion through the gastro-intestinal tract is a possible one.

The disease is essentially chronic. It lasts months or years. There is usually an irregular fever, great loss of weight, sweating, and in generalized infections, marked prostration. In pulmonary infections, on account of its chronic, progressive character and physical signs, it resembles tuberculosis and has usually been diagnosed tuberculosis until examination of the sputum by careful and proper methods has revealed the true nature of the disease .

The organism is a round, quite hyaline-like body, varying from 6 to 8 to 25 or 30 microns in diameter under varying conditions. It has a doubly contoured shell or membrane surrounding it. The inner portion is irregularly granular, often containing many glassy granules of varying size and perhaps some vacuoles. Where material from a lesion is examined (thoroughly mixed with 20% KOH. solution) under the microscope, these bodies stand out very clearly.

CASE REPORT

Mrs. M. R., aged 25, housewife. Present illness began February, 1921, with pain in the right knee with slight swelling. She was confined to bed, during which time she developed "bronchitis." In April, 1921, she was treated with arsenic (salvarsan) intravenously. In May, 1921, she developed nodules on the right chest, over both scapulæ, two on the scalp, and one on the right third finger. Some were opened and contained a clear serum but no pus. The knees became stiff and the arms painful on movement. The "lumps" were quite tender. The right knee was red, swollen, hot, and tender. On left parietal and right posterior occipital region of the skull there were two small fluctuating swellings, circular in outline, having a pronounced crater edge to the bone and being quite tender. There were also two large fluctuating tender masses over both scapulæ below the spines, over which the skin had a fairly normal appearance. There was a similar mass over the sternum and right cartilages from the third to the sixth.

LABORATORY FINDINGS

X-ray of skull showed five rarified areas on the left side, three of them very pronounced.

Blood culture was taken July 20, 1921, on agar plate, dextrose broth, and plain infusion broth. This was negative for bacterial growth, but the broth became turbid about the fourth or fifth day. Transfers to agar and blood agar slants were persistently negative and Gram stains on the sediment were negative. The culture medium in the original dextrose flask, inoculated with the blood, gradually became rather firmly coagulated and tenacious. A hanging drop of this material on the thirteenth day showed many of the variable sized round and oval bodies. All of these contained from one to five or more vacuoles and gave to the organisms an appearance not unlike that of an old suspension of ameba. These organisms grew readily on Sabouraud's medium, though less luxuriantly than the ones from the abscesses.

Culture of Abscess Contents: On the same date the blood culture was taken, the abscess over the right scapulæ was aspirated and a thick brownish-yellow or "prune-juice" colored, somewhat gelatinous material was obtained. Direct examination with and without KOH. showed many of the highly refractile bodies about the size of lymphocytes. Most of these were the round or oval type, regular in outline, while others showed budding. Primary cultures on ordinary laboratory media were negative. On Sabouraud's medium and on dextrose serum agar the organisms grew out readily, becoming visible as fine pin-point white colonies on the third or fourth day.

Treatment: For the cutaneous, ulcerative type of lesion x-ray seems to be very effectual. For the deeper lesions and in generalized infections massive doses of KI. have been highly recommended, but it still has to be proved that they are of any avail. In several instances the old broth cultures were centrifuged, filtered through bacterial filters and the sterile filtrate injected into the patient subcutaneously. Reactions as well as marked improvement were noted in a few instances.

TECHNIC OF PROSTATECTOMY WITH SPECIAL REFERENCE TO THE CONTROL OF HEMORRHAGE

DR. ACHESON STEWART

In this paper four points in the technic of prostatectomy are emphasized. In all operations for prostatic obstruction a general and thorough examination of the patient should be made. This is particularly essential in one who has reached the prostatic age. "We should examine before operation rather than after operation." It is very disconcerting to find that a hasty operation has been performed, that a careful physical rating of the patient has been omitted, resulting in a notation on his chart that the cause of death was myocarditis or uremia. We owe every patient a careful check up on the condition of the cardiorenal systems. Much aid can be rendered these shattered cases by the coöperation and help of the internist. A more intelligent treatment can be given. The surgeon is largely a mechanic and I am fully convinced that more cases will be cured by coöperative work.

Having shared the burden with a medical colleague and feeling satisfied that the patient is primed for operation, the next point for consideration is the kind of anesthetic to be given the prostatic. For several years nitrous oxide and oxygen has been used, sometimes being supplemented with ether. During the past year anoci-association anesthesia has been used with excellent results.

The next or second point is the location of the incision. For many years the mid-line incision was used, opening the bladder high in the mobile part. With such technic, not infrequently I was annoyed by seeing in the final healing of the incision, a vesical fistula. Especially in cases where the drainage was prolonged, the bladder wall or mucosa would proliferate and form a tract out to the skin margin. In order to correct this annoying feature the incision is made through the rectus muscle. It is not necessary, when employing this incision, to open the bladder high. On the contrary it is opened close to or on a level with the symphysis pubis. Since following this technic we have not had a single case of persistent sinus. After opening the bladder a Fryer tube is inserted and the bladder is drained for a week or more. The interval between the first and second stage depends entirely upon the patient. Having elected to perform the safe or two-stage operation on these patients, the second stage is undertaken at a time when the patient is fit and at that time only.

The third point in this paper is related to the removal of the prostate. The technic of enucleation used is that instituted by Squier, "the intraurethral enucleation." Before enucleating the prostate the prostatic sheath and prostatic urethra are injected with a solution of novocain and adrenalin, using a large amount of solution through a Dunn syringe. This, in addition to producing anoci-association, has other specific advantages. When using this technic for the first time one is surprised to find there is practically no operative hemorrhage, and furthermore there is practically no postoperative pain or strangury.

The final and most important point in this paper is the control of hemorrhage. In the early cases iodoform gauze packing was used, inserting sufficient gauze to fill the prostatic cavity and make pressure. This is rather a crude method and far from satisfactory. By packing the cavity with loose gauze the cavity is simply enlarged and consequently the raw surface increased. Now a "gauze packer" rather than a "gauze packing" is used. The packer is made to resemble an umbrella. The gauze is rolled and fastened on to a catheter in such a way that by pulling the catheter out through the urethra the gauze umbrella opens and makes pressure, and at the same time molds the bladder mucosa into the prostatic cavity, reducing to a minimum the area of raw surface. It has also the further advantage of maintaining the patency of the prostatic urethra, and giving it a symmetrical and straight course, and also preventing a tag or fold of mucous membrane from blocking the outlet. The packer is held in position for twenty-four hours by inserting a safety pin through the catheter close to the external urinary meatus.

FUNCTIONAL EFFICIENCY OF CIRCULATORY SYSTEM WITH SPECIAL REFERENCE TO PREOPERATIVE RISK

DR. J. D. HEARD

The problem as to whether the cardiovascular system will stand the strain of an anesthetic, surgical operation and surgical convalescence occupies a foremost place in the minds of many patients who are considering the advisability of surgical interference. Many general practitioners, even many internists, have little knowledge of heart failure as based upon modern conception of cardiovascular disease. Few textbooks on internal medicine have anything but vague references to the recent important clinical and laboratory research which has proved revolutionary in this field.

In attempting to visualize the present situation in regard to medical practice as applied to cardiovascular disease, one must recognize the fact that the situation is better to-day than it has ever been, since there are many physicians who have received special training in cardiovascular boards, in convalescent camps, in associated cardiac clinics, in general dispensaries, and in hospital wards, who are well fitted to consider problems as they arise under conditions of strain familiar to the observer. But the clinical picture of reaction to strain of surgical operation is, as a rule, not familiar to the medical observer. The nature of his professional duties is such as to make it impossible for him to spend a great deal of time in the operating room, and therefore, it is largely from surgical literature that the internist must seek the information desired.

Both internists and surgeons are thus found to be hampered in their attempts to solve borderline problems. Each group is deficient in certain knowledge and experience which is possessed by the other, and it is believed that further progress will largely depend upon a pooling of this knowledge and experience through a closer and more general coöperation in clinical research.

In order that such coöperation may become general and prove effective, it would appear essential that (1) a larger number of general practitioners and internists should receive special training in cardiovascular disease; (2) a standard classification be employed which is acceptable to cardiologists; (3) preoperative cases of selected groups be referred routinely to cardiac clinic or medical consultant for opinion and direction of necessary preoperative medical treatment; (4) postoperative treatment of cardiovascular complications should be carried on under medical advice; (5) a series of combined clinical studies be initiated and carried on in regard to cardiovascular problems as affecting operative risk in certain clinical groups.

DISCUSSION

(1) *Special training in cardiology:* But one phase of the training of physicians in cardiovascular disease will be considered here, namely: the advantages for study offered by the cardiac clinic. Such clinics are now in operation in at least 15 cities in America, there being 31 such clinics in the city of New York alone. Almost every hospital or dispensary staff contains a group which can be trained to carry on successfully such a clinic. Where more than one cardiac clinic exists in a given city or town, these should be affiliated not only with each other but with cardiac clinics elsewhere.

The objects which should be kept in view in forming a clinic should be essentially those which governed the formation of the associated cardiac clinics in the city of New York, these objects being "To gather information on heart disease; to develop and apply measures that will prevent such disease; to seek and provide occupations suitable for heart disease patients; to promote the establishment of special dispensary classes for such patients; to extend the opportunities for adequate care of cardiac convalescents; to urge the provision of permanent institutional care for such cardiac patients as are hopelessly incapacitated for self-support, and to encourage the establishment of associations with similar objects in other cities."

(2) *Nomenclature and Classification:* The basis of all scientific study rests in an attempt to group together things which have certain characters in common. Since the natural history of heart disease is not fully known, no system can be devised at this time which can be accepted as final. However, cardiologists are agreed that a satisfactory classification must take into account etiology and function as well as structural change. Doubtless the expert cardiologist will wish to devise his own system of classification, but it is fortunate that excellent schemes are now available, notably a classification of cardiac diagnosis recently published by White and Myers. These authors state that they have assembled this classification in its present fairly stable form from their experience in the clinic of the Massachusetts General Hospital and from the writings of Mackenzie, Lewis and Cabot. The scheme also embodies the functional grouping as suggested by the New York Association of Cardiac Clinics.

Many cases of potential and all cases of possible or actual cardiovascular disease should be passed upon by medical consultants. It is probable that only those patients who present evidence of cardiac failure will require preoperative medical treatment. Nevertheless it lies within the experience of the internist to elicit an adequate history as applied to cardiovascular disturbance, and to make a diagnosis based on such history, on physical examination, and on such laboratory evidence as may be sought and obtained.

In order that potential cases may be referred, it is essential that the surgeon should know the present status of opinion in regard to the etiology of cardiac disease. Many patients who appear to be potential cardiacs are in reality patients whose heart muscle or endocardium has already become damaged. It is in this group of early cases that preventive treatment of cardiacs gives good results. Attention may be called to the very large group of patients upon whom tonsillectomy is performed as illustrative of this contention. It is apparent that all patients with infective tonsils should have medical survey in order to detect possible presence of early signs of heart disease.

There has recently been a great deal of effort expended by conscientious internists, surgeons, and anesthetists, in an attempt to devise a simple and reliable test which will show the probable reaction of a given patient's cardiovascular system to preoperative, operative, and postoperative strain. This search has largely had as its object the determination of patient's reaction to effort as shown by rise in heart rate, or alteration in systolic or in pulse pressure curves. There can be no question that valuable information may be thus obtained, or that the best measure of risk is a good clinical impression of patient's ability to stand strain, but this must be considered in relation with a good history and a careful physical examination. Huggins has stated that no test has been suggested which will give accurate measurement of the functional capacity of the heart. We may accept this conclusion, and in doing so, we must realize the potential danger which exists in blood pressure formulæ which express but part of the truth in regard to operative risk.

(5) Since the natural history of cardiac disease is imperfectly understood, and since internists are only partially aware of the operative and postoperative reaction of cardiacs to surgical strain, while on the other hand, experience of surgeons is not such as to prepare them to make an accurate diagnosis in the case of cardiacs, there remains a promising field of research in which internist and surgeon shall each play his part. In a larger sense the entire question of operative risk, as applied to ability of cardiovascular system to stand strain, will require further and combined study. In a more limited sense, it is especially desirable that further research be carried on in regard to the arrhythmias and to the results of operation upon such patients where there is definite reason to believe that surgical intervention will indirectly improve the condition of the heart. Frederick B. Utley, M.D., Secretary.

ABSTRACTS FROM AMERICAN JOURNAL OF OPHTHALMOLOGY

BY MATHEW F. CZUBAK, M.D.

PHILADELPHIA

December, 1921

Phlegmon of the Conjunctiva Following Operation: *Frederick A. Kiehle, M.D.*—This is a report of a case operated for pterygium and followed by a phlegmon of the conjunctiva, resulting in total loss of the eye. The usual preoperative precautions had been observed, excepting the culturing of the contents of the conjunctival sac.

Repeated examinations of smears made from the purulent discharge showed a streptococcus and staphylococcus, but efforts to reproduce the phlegmon in laboratory animals failed. All efforts to ascertain the cause were unavailing.

Gunshot Wounds of the Brain with Visual Field Defects: *G. E. Bellows, M.D.*—The conclusions of Holmes and Lister are summarized as follows:

1. The upper and lower border of the calcarine fissure correspond to the upper and lower halves of the same side of the retina.
2. The macula is represented in the extreme posterior tip of the area, perhaps extending a little into the lateral surface.
3. The visual cortex, from before backwards, represents the retina from the periphery inwards to the macula and this relationship is maintained for a considerable distance forward along the optic radiations.

Three cases which came under the author's observation are reported, with radiograms and fields of vision included.

Peripheral Iridotomy (Curran) in the Treatment of Glaucoma: *Harold Gifford, M.D.*—The theory of E. J. Curran, of Kansas City, is regarded by Gifford as one of the most important contributions since the time of von Græfe. This theory is that in the majority of cases of quiet chronic glaucoma, and perhaps in acute cases also, the immediate cause of the increase in tension is an interference with the flow from the posterior to the anterior chamber, produced by a too close application of the lens to the posterior of the iris. This belief of Curran is backed up by approximately 94% of cures in 49 eyes, treated by producing a small hole in the root of the iris either by a peripheral iridectomy or preferably, and in the majority of cases, by a peripheral iridotomy.

Gifford and Patton have operated on 30 eyes by the Curran method and the results have been so satisfactory that they feel like endorsing Curran's claims without qualification.

Curran's description of the technic follows: Knapp's knife needle is passed through at the corneo-scleral junction. The iris is engaged by the point of the knife needle, which on further pushing forms a little ruck in the iris, rendering the easy performance of the counterpuncture. The knife is pushed still further, with pressure directed upward, so as to cut the iris transversely, making a hole about 1 mm. in size. Sometimes it is necessary to make a counterpuncture in the cornea in order to sever the intervening piece of iris. At times it is found that the first puncture makes a hole in the iris sufficiently large and the knife is withdrawn without counterpuncture. In cases of long standing, in which there might be an occlusion of the canal of Schlemm, the knife is directed toward the pectinate ligament of the opposite side so that some of these fibers would be cut by the point of the knife with the hope that free drainage into the canal of Schlemm would thus take place.

Gifford states that most of the difficulty encountered with this technic is the cutting through the little bridge of iris picked up by the point of the knife. This difficulty is obviated by using a Knapp knife needle with a very sharp point and edge, with something of a belly and a blade not longer than 5½ mm. If with this, after making the puncture and counterpuncture in the iris, one will press the blade upward firmly but very slowly against the cornea or sclero-corneal junction, the result is apt to be good. The needle should be introduced subconjunctivally and withdrawn slowly.

Further points in the technic are explained in detail and possible objections to Curran's theory are answered in a convincing and emphatic manner.

Mature and Immature Senile Cataract: *Lt. Col. Henry Smith.*—Smith summarizes his experiences in doing some 50,000 cataract operations, quotes the history of intracapsular extractions and answers some of the objections advanced against this method of extraction. Among the advantages possessed by the intracapsular operation and not shared by the older capsulotomy method are: an immature cataract can be operated as easily as a mature one; absence of after cataract; better vision; and less sepsis, due to absence of tags of capsule left in the wound. Vitreous loss and choroidal detachment are about equal in the two methods, in skilled hands.

The disadvantages of the intracapsular operation are: 1, larger proportion of prolapse of the iris in the non-iridectomy cases; 2, slightly drawn up pupil in the iridectomy cases.

Smith claims that iritis following the capsulotomy method has been proved to be due to leaving behind lens capsule, not lens substance.

He condemns needling of immature cataracts, to hasten ripening, for the reason that a traumatic cataract is produced, which is always accompanied by iritis.

The large incision is defended with the assertion that no facts can be advanced to support the contention that such an incision interferes with the nutrition of the cornea, causes more sepsis or more astigmatism.

As to the claim that intracapsular extraction cannot be done without an iridectomy, Smith answers that it can be done through an entire pupil uninfluenced by a mydriatic, and furthermore, can be done even in cases in which the iris is tied down to the lens by iritic adhesions, a state of affairs certain to cause a violent iritis if extraction is done by the capsulotomy method.

Concerning vitreous loss, the opponents of Smith's operation have to admit 7% incidence, which amount should not be exceeded by an operator skilled in the intracapsular technic. Smith states that in his experience, loss of under a third is not followed by sinister consequences. The consequences of the loss of vitreous in the two methods are quite different. In his operation, there is some fear of a resulting iritis or irido-cyclitis. In the capsulotomy operation, the escape of vitreous compels the operator to close down at once, leaving the capsule and a considerable amount of lens matter in the eye, under which circumstances a severe irido-cyclitis frequently results.

As to the assertion that the vitreous does not regenerate, Smith asks how his opponents know this to be so. Such a statement implies the cessation of the mechanism when the vitreous has reached mature size. How do his opponents know that this happens? Clinical results in cases which had lost considerable vitreous at operation years previously nullify such an assumption.

The pupil in non-iridectomy cases is as central in the one method as in the other. In the iridectomy cases, the pupil is more central in the capsular operation than in the intracapsular. Use of a mydriatic later will show that the pillars of the coloboma following the old operation are always tied down to the after cataract by adhesions, though it may be free elsewhere. This is the cause of the keyhole pupil. The entire pupil contracts on the center, the iridectomy pupil (if there are no adhesions, as in the intracapsular) contracts on the point of attachment of the iris to the ciliary region. This mechanism straightens out the keyhole into the shape of a U and of necessity draws up more or less the lower part of the pupil.

One of the most important issues on cataract operation at the present time are the contractions of the orbicularis, which are the cause of the prolapse of the iris and which necessitate an assistant. Smith hopes to do without iridectomy by finding a drug which will paralyze the orbicularis for 5-6 days after operation.

As for not dressing and inspecting his cases soon enough or often enough, he answers that the only complications he fears are sepsis, choroidal hemorrhage and prolapse of the iris. In his observation, sepsis and choroidal hemorrhage defy treatment and at any rate, give indications and naturally are inspected. Prolapse of the iris gives no indication and is much better let alone 10-12 days, lest interference cause the whole wound to burst open.

Finally, Smith states that to assume that you can cut or hack East Indians in any way you please and that they will recover, shows gross ignorance. As a matter of fact they are not as good subjects for operations as Europeans. Their vegetarian diet is probably the cause of their poor resistance. General operations best prove this. It is not uncommon for a Western surgeon to spend one and a half, two, or even three hours on an intra-abdominal operation and for the patient to recover. In an Indian, if you expect a similar operation to be successful, you must not spend more than an hour on it, and if you do it in half an hour, your death rate will not be nearly so large. Indians are not an uncivilized race but belong to the Ayran race, to which we also belong, and they were a highly civilized race long before Europeans were.

Uveitis with Dense Vitreous Opacities; Partial Recovery: *Robert H. Buck, M.D.*—Following an attack of mumps, complicated by orchitis, this patient developed metastatic ophthalmia, reducing vision in his right eye to shadows and in his left eye to fingers at one foot. The treatment, continued for ten months and again resumed after a lapse of five months, consisted of atropin; dionin alternated with yellow oxide ointment every three days; and hot applications. Subconjunctival injections of salt solution, later changed to cyanid of mercury, given weekly alternately in each eye. Internally, increasing doses of potassium iodid to toleration. Mercury inunctions, pilocarpin sweats and hot packs were given in decreasing frequency.

The ultimate result was 8/10 vision in each eye for distance and J.3 at 15 cm. for near.

Cataract Operations in the Aged: *Samuel G. Higgins, M.D.*—Certain observations are made from operations on aged persons—patients over 80:

Extraction is attempted when the details of the fundus cannot be seen anywhere through the lens.

A cataractous eye is not a healthy eye.

To operate an eye that does not respond to light is useless; light perception to colored lights adds more cheer to the prognosis.

Cataract operation when the eye is in an attack of glaucoma is very hazardous.

Diseases of the eyelids should be cleared up before operation.

Dacryocystitis is the condition most feared by the writer and should be thoroughly treated, even to extirpation of the sac.

Disturbing bronchitis with cough, asthmatic tendencies, indigestion with belching or flatulence, and constipation or diarrhea require appropriate treatment.

Inevitable arteriosclerosis, valvular heart disease, chronic nephritis and glycosuria do not contraindicate cataract operation.

The risk of delirium or acute psychosis is inherent in the patient. Edward Jackson's observations on this subject are descriptive: "The obscure nutritive failure that produces senile cataract is closely allied to the obscure nutritive deterioration that predisposes to insanity. One may suspect that such a predisposition may be lurking in a large proportion of patients suffering from senile cataract."

Rather than bump the patient in and out of the hospital elevator, the patient is operated on his own bed.

A detail of occasional vital importance is the care and personal inspection of drugs, droppers and irrigating solutions.

On completing the toilet of the operation, 20% argyrol is dropped over the incision and 1:3000 bichloride ointment is placed between the lid margins.

Postoperative catharsis is not given before the fourth day.

The dressing is not disturbed before the third, fourth or fifth day, according to the pain and uneasiness.

Eye Complications of the Diseases of Childhood: *H. C. Peabody, M.D.*—Scarlet Fever: Albuminuria accompanies nearly all cases and albuminuric retinitis or uremic amaurosis may result. The retinitis, like that of pregnancy, often occurs with a benign kidney lesion and offers a good prognosis. Optic atrophy occurs in proportion to the retinal destruction. In uremia, the pupil reacts to light, the blindness is sudden and complete and the ophthalmic findings are negative. These symptoms serve to differentiate this condition from the retinitis. Optic neuritis, orbital cellulitis, purulent choroiditis, and ulcus serpens are very rare complications.

Measles: This shows early photophobia, epiphora and hyperemic conjunctivitis. In order to overcome the photophobia, these children develop a marked blepharospasm which later increases the conjunctivitis, establishing thereby a vicious circle. Holt advises screening the patient's bed but not excluding the sunlight from the sick room, to protect the sensitive eyes of the patient.

Diphtheria: A severe diphtheritic involvement of the eyelids and conjunctiva may occur, as all mucous membranes are subject to the toxins elaborated by the bacillus on mucous membranes. In the more severe cases, the cornea rarely escapes. If the entire area of the conjunctiva is infiltrated and rigid, the cornea is irretrievably lost. The most interesting and common eye complications are the paralyses which develop during the latter part of the disease or often weeks later. They may follow cases so mild that the diagnosis of diphtheria was never made. Diplopia in the extrinsic paralyses, and inability to read in the intrinsic paralyses are the most common complaints.

Mumps: Edema of the lids, conjunctivitis and chemosis of the conjunctiva due to compression of the vessels of the neck may occur. The lacrimal gland may be involved. Optic neuritis, iritis and ocular paralysis occasionally occur, as does permanent blindness.

Whooping Cough: Conjunctivitis and epiphora are common early. Photophobia and mydriasis may indicate the transition from the catarrhal to the convulsive stage. Of importance are the extensive hemorrhages, subconjunctival or orbital, resulting from the violent coughing. The orbital hemorrhages may be so severe as to cause a proptosis. Cerebral hemorrhages may cause complications. Meningeal hemorrhages are far more common than those into the brain itself.

The Use of Iodin in Corneal Ulceration: *Harry W. Woodruff, M.D.*—Prompted by the communication of Dr. Harold Gifford in a previous number, Woodruff gives the following formula as an effective method of applying iodin locally; Zinc iodid, 15 parts; iodin (cryst), 25 parts; glycerin, 50 parts; distilled water, 10 parts. This solution is less fluid than tincture of iodin and does not evaporate rapidly.

EXCERPTS FROM STATE MEDICAL JOURNALS

FRANK F. D. RECKORD, M.D.
Assistant Editor

THE VALUE OF RADIUM IN GYNECOLOGY

F. E. Keene, M.D., Philadelphia

We are of the opinion that certain types of myomata contraindicate radiation and they can be classified as follows:

I. Tumors larger than a four months' pregnancy, or tumors of any size complicated by inflammatory disease or neoplasm of the adnexæ. In exceptional cases of large tumors, we have used radium where grave cardiac, pulmonary, or renal complications precluded hysterectomy, or in cases of profound anemia, to control the hemorrhage until the patient's condition was sufficiently improved to warrant operation.

II. Tumors not producing hemorrhage, but whose chief clinical manifestations are those due to pressure on adjacent structures. Under such circumstances, the decrease in the size of the tumor following radiation is not sufficiently rapid to warrant such a procedure.

III. Tumors associated with a cachectic appearance of the bearer, with an anemia unaccounted for by the quantity of blood lost during menstruation. We have observed several such instances explained by the absorption of toxic material from a necrotic or degenerated myoma, and a rapid and complete recovery followed hysterectomy.

IV. Tumors so distorting the uterine cavity that the introduction of radium to the top of the uterus is impossible.

V. Pedunculated tumors concealed within the uterus or projecting from the cervical canal.

VI. Calcareous tumors or tumors which have rapidly increased in size, or are associated with intermenstrual, as well as menstrual pain.

VII. Tumors, single or multiple, in young women, since radium in sufficient quantity to affect the tumor may produce a premature menopause as well as sterility.

VIII. In patients with tumors of moderate size, whose history suggests a coincident disease of the gall bladder, stomach, appendix, et cetera, in whom appropriate examinations do not warrant a definite diagnosis of an extra pelvic lesion. Under such circumstances, we would advise operation and be governed by our findings as to the advisability of hysterectomy or radium, using the latter in case the measures required to meet the abdominal lesion precluded a combined operation.

Radium is the treatment of choice in the smaller myomata whose only symptom is hemorrhage. In such cases, as well as in myopathic hemorrhage, a cure can be expected in at least 95%. Rarely a reapplication or operation may be necessary.

A large group of myomata are not suitable for radiation and should be subjected to operation.

The test of time has shown that in properly selected cases, the myomatous uterus suffers no ill effects from radium, but, on the contrary, there is a gradual diminution in the size of the tumors, which may eventually disappear.

The application of radium is attended with no mortality and a minimum of morbidity.

Symptoms of the menopause are the chief subjective complaint, but, as a rule, these are not of sufficient moment to cause the patient much concern.

MALIGNANT PELVIC TUMORS

I. As a palliative remedy, radium is the treatment par excellence in inoperable cases of cancer of the cervix and vagina.

II. In border-line cases in which formerly we accepted the grave risks of an operation in the hope of eradicating the disease, we now employ radium, but in the certainly operable class, we still advocate a radical operation followed by postoperative radiation.

III. In cancer of the fundus, even when far advanced, we perform a hysterectomy, resorting to radiotherapy only in the face of grave operative contraindications.

Supplementing these, we may add:

IV. Hysterectomy is inadvisable in cases apparently rendered operable by radium.

V. In the operable case, the value of preoperative radiation is still open to question and must be determined by further experience.

VI. The local eradication of cancer by radium has been established without question of doubt, and we venture the hope that in radiotherapy we have a remedy which may supplant operation in the treatment of early carcinoma of the cervix.—*From the New York State Journal of Medicine, January, 1922.*

PYELITIS

H. Dawson Furniss, M.D., New York City

Treatment: Predisposing and exciting causes must be discovered, eliminated or remedied as soon as practical. Of course, during an acute attack no one would think of extracting teeth or removing tonsils, etc., but uterine malpositions or pressure from a pregnant uterus can be relieved or lessened. At a suitable time, however, the source of infection must be given attention.

In the fulminating attacks, when the patient is in a desperate condition, nephrectomy must be done if only one kidney is diseased. Fortunately, these cases are rare.

In acute attacks not requiring operation, the patient must be put to bed and absolute rest enjoined. Heat applied to the renal region is grateful and has a beneficial effect on the condition; dry cupping also is of value. For the first week or ten days, sodium citrate or sodium-bicarb. or both are given every three hours in forty to sixty grain doses. If not tolerated by mouth they may be given by rectum. Water is forced by mouth. Colon irrigation, either with tap water or a 2% soda bicarb. solution, is done once or twice daily. If pregnancy exists, an attempt is made to relieve ureteral pressure by posture. In the majority of cases betterment is noted in a few days; there is a drop in temperature to normal or near normal. When such occurs the patient is put on urotropin and acid sod. phosphate.

Should such favorable effect not be produced in a few days, ureteral catheterization and renal lavage should be done. In the first two or three days of primary attacks, when the infection is in the parenchyma, such a procedure is of no value; but when pus is found in the urine or early in the recurring attacks, it is a most efficacious procedure. If gently and carefully done there is little discomfort or damage and the results are often dramatic. I do not hesitate to repeat it every two days, or even every day. Silver nitrate in .5% strength has given the most satisfaction. This, I think causes a shringing of the swollen ureteral mucosa and increases the drainage. To me, this is a most rational procedure and certainly the results are excellent. An acute cystitis causes greater difficulty and more pain, but is not a contraindication.

The majority of the acute attacks get well spontaneously or on simple treatment. Those that do not, fail because of some factor that is a constant source of infection or interferes with drainage. If we grant this is so, then we must find our sources of infection; eliminate them, and establish drainage. Ureter stricture is a frequent cause of bad drainage and must be relieved by dilatation if we are to get good results.

Before instituting treatment of the chronic cases we must determine the function of the kidney and the damage done. It is in the old chronic infections that the great value of local treatment is seen. The majority have had all kinds of other treatment—including acids, alkalies, antiseptics and vaccines. There are a few we cannot cure by local treatment, but it is seldom that even these are not benefited. In the cure of these cases we accomplish more than the relief of a local condition. Many of the colon bacillus infected patients suffer with absorption symptoms, as shown by mental depression, weakness and often arthritis.

The lavage treatment is applicable in girls of four and over, and in boys as young as eight. Kretchmer has reported brilliant results in a series of eight children with chronic pyelitis. Our youngest patient was a girl of six to whom this treatment was given painlessly—without any form of anesthesia.

The local treatment has given me better results in both the acute and chronic infections than anything I have tried. It must be remembered that most of the chronic cases have been treated for years by all other kinds of methods—the success in these is the best endorsement.—*From the New York State Journal of Medicine, January, 1922.*

SOME THERAPEUTIC SUGGESTIONS IN THE MODERN TREATMENT OF EPILEPSY

L. Pierce Clark, M.D., New York City

Essential epilepsy is an organic disease of the whole personality, shown in a series of defects of instincts These outstanding faults are summarized in egocentricity, supersensitiveness and emotional poverty. The fit is the maximum periodic manifestation of the disorder; it is a psychic regression phenomenon, a protective release of the mental mechanism from too intense physical and mental stress. The line of treatment is analytical, explanatory, and a broadly reëducative one, physically and mentally.—*From the New York State Journal of Medicine, January, 1922.*

Dr. O. Pine queries:—Why is it that when you get the best of one of your confreres in an argument, he can often come back and devocalize you with: "The Mayos do it"?

THE SCRANTON SESSION OF OUR STATE SOCIETY

The meeting of the Medical Society of the State of Pennsylvania at Scranton, beginning Monday, October 2d, offers attractions out of the ordinary to our membership. We are assured of a high standard in the scientific program and for the enjoyment of the social features, that part of our yearly assembly which should leave happy memories, we have the assurance of the Scranton Committee on Entertainment that our stay as their guests in the metropolis of the great northeastern section of our state will be one that we can happily recall.

HAHNEMANN HOSPITAL

WEST SIDE HOSPITAL

STATE HOSPITAL

MOSES TAYLOR HOSPITAL

It is six years since the Lackawanna County physicians were hosts to the State Society. In that period the unparalleled road construction of the state has reached its height. The great highways from one end of the commonwealth to the other send out their inviting inducements to the seeker of relaxation and lover of nature. If there is any one among the busy workers of the world who should take advantage of this opportunity it is the active doctor and his family. What is more inviting than the thought of a trip over splendid highways in the early days of October, "when parting summer's lingering blooms delayed" make pleasant every mile of a happily planned journey; and when one winds his way through valley and over hill and mountain, made easy and comfortable by superior driveways, to a warm welcome in the thriving-city that spreads itself in the valley beside the Moosic Mountains. The warm-hearted hospitality of Scranton, the Convention City, is proverbial; and it will have a new appeal for physicians and their families who have been strangers within her gates for the past six years.

The Lackawanna Trail, that unique highway, for a great part over the abandoned roadbed of the Lackawanna Railroad, and connecting New York State with New York

City, will be fully completed long before the meeting of the State Society. The attractions of this Trail will be at their best with the approach of autumn. An hour's ride over the concrete highway will bring one to the heart of the Poconos in one direction, and in the other up and beyond the great Nicholson Viaduct, famed now as the eighth wonder of the world. This unexampled piece of engineering and concrete construction will be a novelty indeed to those who have never seen it.

Farview, the site of Pennsylvania's State Hospital for the Criminal Insane, and located on the very summit of the Moosic Mountains, overlooking a great sweep of fertile country, dotted with silvered lakes, is but an hour's ride up the Lackawanna Valley. Mountain lakes, with approaches through scenes of rare pastoral beauty, are just beside the thriving metropolis of the anthracite region; while Moosic Lake, reached by a trolley winding its way up the mountainside, is a rare example of a forest-lined lake close to the "gateway of the clouds." These are a few of the features that the coming guests of the Lackawanna Society can contemplate in arranging for their visit to Scranton in October.

No member should miss the Scranton Session. It behooves you to make your plans and reservations now to attend that meeting. The splendid program prepared should be sufficient attraction, and when added to those which are herein illustrated offers sufficient inducement to be on hand.

The Committee on Entertainment has prepared a program for the ladies which is so attractive that no member should for a moment neglect to consider his wife as a member of the party to attend the Scranton Session. Neighbor,—plan to bring your wife and family.

DON'T FORGET THE DATE—OCTOBER 2, 3, 4, AND 5, 1922.

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June, 1922

EDITORIALS

FUNCTIONING OF THE HEART IN CARDIAC DISEASE

A very interesting article with the above title appears in the *Canadian Medical Association Journal* for August, 1920, by Dr. John A. Ollie, of Toronto, Canada. He gives a brief summary of our knowledge of the normal and pathological physiology of the heart. In part his ideas are as follows:

To the functions of the heart muscle, contractility, irritability, conductivity, rhythmicity, and tonicity, he adds one more—adaptability. The power of the heart to adapt itself to varying needs in the tissues and organs of the body is quite beyond our understanding, because the organ acts as if it had a mind of its own, superior in moral respects to our other mind in that its abilities are always exercised in the best possible manner for the good of the community (of organs); it is always benevolent, never malevolent.

When the body is at rest, the heart pumps about three liters of blood a minute. In moderate exercise, this amount increases to twelve, and in violent exercise to twenty-one liters a minute, and this at an increased blood pressure. The reserve power of the normal heart is shown to be about nine or ten times the work at rest.

The heart itself is a large factor in regulating the blood pressure with the coöperation of the vasomotor system or in spite of the vasomotor system. The open peripheral field causes or allows increased flow from the arteries to the veins, yet in spite of this the heart maintains an output greater than that escaping from the arterioles and therefore the blood pressure rises.

The lesson we learn from this is that lowering the blood pressure does not lessen the work of the heart muscle. It rather tends to increase it in the average cases, as it increases the rate and output. Hence the uselessness of nitroglycerine and nitrites in cardiac failure due to myocardial disease or to vasomotor failure such as occurs in severe infections like pneumonia. Ollie says not only is such a principle of treatment useless, but it is actually harmful, doing the reverse of what was intended and lessening at the same time the blood flow through the coronary arteries by increasing the rate of contraction and lessening the resistance in other parts of the circulation.

The adaptation of the heart to the varying demands occurs equally well when the heart is completely separated from nervous control. In order to demonstrate this fact, the so-called "heart lung preparation" is set up, by which it may be shown that the coronary flow rises exactly in proportion to the blood pressure. When the total left ventricle output is 850 c.c. a minute, the coronary flow is 40 c.c. with a blood pressure of 84. With a pressure of 208 the total output is 860 c.c. (unchanged), the coronary flow is 260 c.c. increased six and a half times, or by 220 c.c. a minute, and the systemic output therefore is lessened by 200 c.c. At the same time, the metabolism of the heart muscle is increased in the same proportion as is the blood flow. This is what goes on in simple hypertension. The blood flow is not increased. The systemic supply may be actually lessened by 200 c.c. a minute, but the coronary flow is greatly increased—six or sevenfold. This no doubt causes greatly increased coronary strain, from the wide variations in coronary pressure, and accounts for the frequency of coronary sclerosis in high blood pressure.

Dr. Ollie points out and emphasizes that the ratio of coronary flow to blood pressure is a still further reason for the harmful effect of attempting to lower the blood pressure with a failing heart muscle. The heart has the power automatically to maintain its output to its intake under a wide variation of volume, to regulate its output independent of blood pressure or valvular defects, to regulate its own blood supply so that more blood and oxygen are supplied to its own tissues when more work is done, and to assist in regulating blood pressure with or in spite of vasomotor changes. Dr. Ollie says cardiac failure is always myocardial failure, due to myocardial disease.

The chief importance of even such serious valvular defects as mitral stenosis or aortic stenosis or insufficiency is that these are results of long continued disease, either infective or degenerative (arteriosclerotic) in character which damages the heart muscle at the same time. The same is true of aortitis, whether syphilitic or not. A man with a syphilitic aorta rarely dies of rupture of the aorta. He dies of myocardial weakness of syphilitic origin. If the above physiologic facts are always kept in mind in the treatment of patients who are suffering from myocardial disease or degeneration much harm may be prevented that occurs now every day, by the promiscuous and indiscriminate use of the nitrites and nitroglycerin. G. E. H.

THE SCIENTIFIC SESSIONS OF THE STATE SOCIETY

A SPLENDID THREE DAYS' POSTGRADUATE COURSE

When one considers that postgraduate instruction is obtained in many ways, it is of importance to consider every means by which the graduate in medicine may receive medical information. We have before us the scientific programs of the past four years and a perusal of them affords an opportunity to discuss the value of our State meetings. The Committee on Scientific Work labors industriously each year to secure the best speakers and the best subjects for discussion it is possible for them to obtain.

A review of the teachers, because readers of papers in that capacity are teachers, during the past four years, has presented a fund of surgical, medical and special information which is difficult to obtain in so short a period of time as that in which these papers are read at each annual session. It seems strange that some will make the observation—Why go to the State meeting when one may read the papers and discussions printed in the official Journal? True the papers may be read throughout the year, but listening to the reading and discussion of these papers lends an added force, which is not obtained by only reading them. How many of us visualize the full force of an article printed in the textbook? How much more vivid would be the impression were we to listen to the same author giving a didactic lecture or a clinical demonstration upon the same subject!

The question of postgraduate instruction is now receiving a great impetus through the Postgraduate School of Medicine of the University of Pennsylvania. The course planned is extensive, covering several years, and we commend this school to those who are looking for an opportunity to take postgraduate work, believing that those who can avail themselves of the opportunity will be indeed fortunate. It is not possible for every practitioner to close his office and absent himself from his patrons' calls for a sufficient length of time, without seriously making inroads in his work, because the absence from home for such a length of time detracts from his standing with some patients. The short period of time necessary to attend the annual session of the State Society affords a fine opportunity to refresh the mind upon the various subjects presented, and the facts obtained will carry one through the year and be a continual reminder of things which will aid in treating the sick.

A still better method of developing the benefits derived from the annual session is to be not only a good listener, but also to participate in the discussions, thereby presenting knowledge which would aid others as well as arousing an interest in the work, which devolves on a few of the Society in collecting material for each session.

Medical education is not the development of the college entirely. It is the postgraduate experience and the everyday work in any particular branch of medicine, which gains for the practitioner his reputation for skill and ability, and this may be vastly improved by the professional intercourse at the State meetings. This subject has been presented in various ways and is rather worn threadbare, but we believe that were more to attend the annual sessions and devote the necessary time to looking up in medical literature the subjects which will be presented, thereby being prepared to understand thoroughly the subjects discussed, it would make for a better condition in the practice of medicine, and would overcome to a great extent the criticisms which the public frequently makes of inferior medical practice.

The older members of the State Society are familiar with the fact that from year to year we see the same faces and deplore the absence of many whom we know should derive the benefit of attending the sessions. In justice to themselves those who have remained at home in the past should now prepare to set aside the first week in October of 1922 and attend the 72d Annual Session of the Medical Society of the State of Pennsylvania in Scranton.

THE NEED FOR BETTER MEDICAL WORK

Physicians, as a whole, must realize more than ever before that there is a pressing need to give the public better medical advice and to make more searching investigations to ascertain the cause of the patient's trouble—also the extent of progress of the disease so as to have some idea as to the prognosis and treatment.

Many a medical student graduates, and having secured an appointment as resident physician in a hospital, does not utilize his opportunities. Unless there is strong influence brought to bear by an energetic chief, he becomes more or less satisfied to do no more study on his cases than is absolutely necessary. If he completes his necessary time he begins his life work as a general practitioner. Here then is also a chance to drift into that dreadful whirlpool of indifference. It is so easy to use formulas of drugs of the numerous manufacturing companies, and to issue them, depending upon the subjective symptoms of the patient.

Thus, patients suffering from diphtheria receive antitoxin late because the throat was not examined at the initial visit, or the mouth was neglected in the search for foci of infection. Many cases of hidden tuberculosis are never recognized because the doctor is unfamiliar with the tuberculin test. Numerous cases of active chronic pulmonary tuberculosis are considered and treated for bronchitis. Scores of physicians will attempt to render an opinion of the findings in the chest without having the patient remove the shirt. Many times the physician will not tell the patient that he is suffering from tuberculosis because he is afraid the patient will not come back.

So often a patient who is suffering from symptoms such as flushing of body, tachycardia, tremors, moderate hypertention, some gastrointestinal symptoms, is told she is nervous and to go home and forget it, when in reality she has a moderately active toxic goiter which is not recognized until after the toxemia has advanced considerably.

Many women who are constipated are told that this is natural to women and various cathartics are administered. No effort is made to find the cause of the constipation which is so often due to gastro-enteroptosis, and which can be greatly helped by instruction as to diet, exercise, posture and properly fitting abdominal supports.

The numerous intestinal diseases can only be properly diagnosed by obtaining a careful and accurate history of the condition. Then, if necessary, resort to the x-ray, gastric analysis and examination of the feces.

The duodeno-biliary drainage method is of great assistance in learning something about the changes taking place in the gall-bladder and ducts, and should be practiced in studying that system.

The routine examination of the urine is of great importance. Much is ofttimes learned from a single examination.

If albumin and casts are found in the urine, and the urine is of low specific gravity, it is then important to make further investigation to ascertain the functional ability of the kidneys. Also, where laboratories are available, it is desirable to have an estimation of the blood urea, and the amount of the urea eliminated in the urine during a twenty-four-hour period. By this means one may render a definite prognosis as to the extent of the disease and the approximate duration of life. If pus is found is it not important that further investigations be made to determine the source? It may be due to some infection along the course of the urethra. Or it is possible that it is being cast off by one of the kidneys. Therefore the cystoscope is most useful in such cases.

In diabetes mellitus, the doctor should instruct the patient or some member of the family to test the urine for sugar daily, particularly while the tolerance for carbohydrate material is being estimated. The doctor should bear in mind that there may be an acidosis existing, regardless of whether the urine is free of sugar or not. Therefore, the importance of examining for acetone and diacetic acid will be recognized. Likewise the blood sugar estimation is important and should be done frequently, if possible.

Patients are reading more and more each day in magazines and various articles about certain methods of diagnosis, and they have a right to demand that efficient service be rendered to them. It is therefore up to every physician to keep himself familiarized with what is taking place in the progress of medicine. Unless this is done patients will lose faith and resort to the various cults which are thronging our cities and towns.

F. F. D. R.

PENNSYLVANIA AND GRADUATE MEDICINE

Pennsylvanians may well be proud of the preëminent position of their state and Philadelphians of their city, in the field of postgraduate teaching. The report of the Carnegie Foundation is especially illuminating and accords the

Graduate School of the University of Pennsylvania an exalted position as the leader.

The lay press seized the opportunity to comment most favorably in an article in the *Philadelphia Ledger* recently, in which it was stated that Philadelphia's primacy as a medical centre has just received a most striking demonstration in a series of tributes to the Graduate School of Medicine of the University of Pennsylvania, the only comprehensive graduate school of medicine in the United States and, for that matter, in the world. Those tributes come: from the medical divisions of the Army and Navy Departments at Washington; from the Carnegie Foundation for the Advancement of Teaching; from the Fellowship and Medicine and Postgraduate Medical Association of London; from graduate physicians and surgeons of eleven other lands. Also at the recent testimonial banquet given Dr. George E. deSchweinitz, president-elect of the American Medical Association, by the Philadelphia County Medical Society, attention was called by several speakers to the magnificence of this work, its far-reaching effect and Philadelphia's continued leadership in American medicine. Dr. Wm. C. Braisted, president of the Philadelphia College of Pharmacy, former Surgeon-General of the Navy, on this occasion outlined the plan for the establishment of a national Institute of Therapeutics at Philadelphia, the first of its kind in America, in the expectation that extensive research will enable the discovery of the therapeutic power of hundreds of unknown drugs, the active principles of plants which have heretofore never been investigated. According to an eminent British surgeon, E. Archer Brown, "Philadelphia must be considered the premier postgraduate school in the world." G. H. C.

THE RELATION OF THE PHYSICIAN TO THE DRUGGIST

In the *Principles of Medical Ethics* of the American Medical Association appears the following:

> "PHARMACISTS
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> "Sec. 4. By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he be qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians."

Pharmacy is the handmaiden of the physician, and there is much that the physician should consider in his relation to the pharmacist. The physician should not be influenced to prescribe as he too frequently does, the various preparations called to his attention by the "detail man," either by personal interview or samples sent through the mail. This is the cause of druggists purchasing a great deal of unnecessary stock, which remains on the shelves scrapped, as possibly only one or two prescriptions have been filled with the drug or preparation in question; the patient has paid an undue price for the prescription and the remainder is a loss to the druggist, owing to original cost and no further demand.

Physicians should demand of druggists standardized physiological preparations, and high grade quality of drugs. Substitution, of course, should not be tolerated. Patients frequently ask the question, "Doctor, where shall I have this prescription filled?" In certain communities, physicians make it a practice to refer all their prescription work to a certain druggist. This is a local custom, in such communities. A physician, however, should not hesitate to advise a patient not to take a prescription to certain druggists, if he is sure that the particular druggists are not honest at the prescription counter. There are some druggists who charge exorbitant rates for the compounding of prescriptions, which is unwarranted and should be censured. The druggist should join the physician in his altruistic endeavers to seek proper legislative control for osteopaths, chiropractors, drugless healers, etc.

The druggist should discontinue counter prescribing, if he expects to occupy his proper place as an ally to the medical profession. The druggist who refills "ad lib" prescriptions should realize he is placing commercialism ahead of the ethics of his profession. This is more especially true when there is a printed request on the prescription blank, calling particular attention to the fact that the prescription should not be renewed.

The physician should aid the druggist whenever possible in obtaining recreation, for instance, the Sunday closing for a certain number of hours. The druggist confines himself too closely to business, and should get in closer contact with physicians. Some physicians are too quick to condemn the manner in which their prescriptions have been compounded, which, invariably, is due to their own ignorance of pharmacy. Do not forget that very frequently the druggist is checking you up, on the phone or otherwise (secretively) on incompatibilities, dosage, quantities omitted from prescription, etc.

In conclusion, it must be borne in mind that physicians and druggists are coworkers, and not competitors. F. C. H.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

SCRANTON, OCTOBER 2d.

The Committee on Scientific Work have completed their program for our 1922 Meeting. The Chairman of the Committee, Dr. T. G. Simonton, who has served several years in this capacity, believes that the program as arranged for this year excels those of former state meetings. Manager of Sessions and Exhibits Van Sickle, adhering to the well-founded policy of holding all meetings under one roof, believes that this year's meeting place affords facilities hitherto unequaled. Dr. O'Malley of Scranton, Chairman of the Local Committee on Arrangements, believes that his plans when carried out will excel the social plans of all previous meetings. Members of the Society who have attended previous meetings held in Scranton believe that the mountain scenery and motor drives of northeastern Pennsylvania equal those of any other portion of the State. These opinions seem to make it unanimous that the 1922 meeting will be well worth any effort or expense required for attendance thereon. Obtain your hotel reservations and your garage reservations early.

1922 HOUSE OF DELEGATES

Members of component societies are herewith reminded that delegates to the Scranton Meeting should be elected and their names, with those of two alternates for each delegate, forwarded to the Secretary's office, not later than July 31st. Each county society is entitled to one delegate and two alternates in the proportion of one delegate for each one hundred members or fraction thereof in good standing on June 30, 1922. You are urged to choose as delegates only those who are actively interested in the welfare of the organized medical profession, and who will go to Scranton for the first meeting of the House, Monday afternoon, October 2d.

1922 MEMBERSHIP LIST

The 1922 list of officers, committeemen and members of the sixty-three county medical societies will be published with the July number of the PENNSYLVANIA MEDICAL JOURNAL. As usual, every effort will be made to have the lists accurate as of June 15th. There are delinquent memberships to be revived in forty component societies and there are eligible nonmembers in at least sixty of the sixty-three counties. Officers and members of the component societies are urged to bend every effort to converting these eligible nonmembers to active membership. There are certain counties in Pennsylvania whose eligible nonmembers equal twenty to thirty per cent of the membership of their county society.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since April 19. Figures in first column indicate county society numbers; second column, State Society numbers:

Apr. 19	Bedford	16	6818	$5.00
20	Blair	82	6819	5.00
21	Beaver	60	6820	5.00
	Chester	73-76	6821-6824	20.00
	Fayette	93-112	6825-6844	100.00
22	Luzerne	194-196	6845-6847	15.00
24	Venango	50	6848	5.00
	Cambria	125-126	6849-6850	10.00
25	Luzerne	199-200	6851-6852	10.00
	Susquehanna	17	6853	5.00
	Lycoming	112	6854	5.00
	Montgomery	153	6855	5.00
	Blair	83	6856	5.00
	Luzerne	197-198	6857-6858	10.00
26	Jefferson	49-50	6859-6860	10.00
	Blair	84	6861	5.00
27	Dauphin	152	6862	5.00
	Center	25	6863	5.00
	McKean	39	6864	5.00
	Venango	51	6865	5.00
	Luzerne	201	6866	5.00
	Berks	138	6867	5.00
28	Lawrence	56	6868	5.00
29	Somerset	42	6869	5.00
	Northampton	134	6870	5.00
May 1	Philadelphia	1801-1900	6871-6970	500.00
	Luzerne	202-204	6971-6973	15.00
	Montgomery	154	6974	5.00
2	Erie	119-121	6975-6977	15.00
	Armstrong	56-57	6978-6979	10.00
	Fayette	113-114	6980-6981	10.00
4	Erie	122-126	6982-6986	25.00
	Dauphin	153	6987	5.00
	Allegheny	1176-1178	6988-6990	15.00
5	Beaver	61	6991	5.00
	Lackawanna	168-177	6992-7001	50.00

6	Clearfield	65	7002	5.00
	Northumberland	60	7003	5.00
9	Erie	127	7004	5.00
	Luzerne	205-212	7005-7012	40.00
	Westmoreland	149-150	7013-7014	10.00
10	Luzerne	214-215	7015-7016	10.00
	Venango	52	7017	5.00
	Potter	14-15	7018-7019	10.00
12	Blair	85	7020	5.00
	Venango	53	7021	5.00
	Lackawanna	178-180	7022-7024	15.00
	Luzerne	216	7025	5.00
13	Lawrence	57	7026	5.00
	Luzerne	217-218	7027-7028	10.00
	Delaware	89-90	7029-7030	10.00
15	Washington	121	7031	5.00
	Tioga	29	7032	5.00
18	Venango	54	7033	5.00
	Luzerne	219	7034	5.00
19	Somerset	43	7035	5.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to May 15:

Allegheny: *New Members*—Theodore R. Helmbold, James P. McMullen, Harvey N. Mawhinney, Earl Vandergrift, Mercy Hospital; Archibald Wiese, 530 E. Ohio St.; Vincent J. Grauten, 3727 Brighton Road, Pittsburgh; Edward P. Griffith, 389 Butler St., Etna. *Resignation*—Walter Aye, Conway. *Deaths*—John S. Phillips (Miami Med. Coll., Cincinnati, '76), of Pittsburgh, March 31, aged 70; Christopher C. Hersmann (Coll. Phys. and Surg., Baltimore, '84), of Pittsburgh, April 30, aged 69; Howard E. Deen (Univ. of Penna., '04), of Braddock, May 3, aged 44.

Armstrong: *New Member*—Bruce B. Summerville, Rimersburg (Clarion Co.). *Transfer*—William H. Nix, Furnace Run, from Chester Co.

Berks: *Removal*—Isaac B. High from Shillington to 1717 S. Conestoga St., Philadelphia. *Death*—Adam M. Robinhold (Jeff. Med Coll., '13), of Hamburg, May 3, aged 34.

Bradford: *Removal* — Walter E. Lundblad, from Sayre to 235 E. 68th St., New York.

Cambria: *New Member*—William J. Murray, 225 Market St., Johnstown.

Chester: *Reinstated Member*—Guy T. Halcombe, Oxford. *Transfer*—Charles M. Kerwin, West Chester, from Philadelphia County.

Clarion: *Death*—Benjamin G. Wilson (Princeton Med. Coll., '98), of Clarion, April 25, aged 46.

Clearfield: *Reinstated Member*—Floyd G. Patterson, Dubois.

Columbia: *Transfer*—John T. MacDonald of Norristown to Montgomery County.

Cumberland: *Death*—Hildegarde L. Lee (Woman's Med. Coll., Philadelphia, '91), of Carlisle, April 21, aged 54.

Dauphin: *New Member*—Howard E. Milliken, 1837 N. Sixth St., Harrisburg.

Delaware: *New Members*—J. Hume Miller, 1629 W. Second St.; Emile E. Raven, 1908 W. Second St., Chester.

Erie: *New Member*—Barney B. Smith, 129 W. Eighth St., Erie. *Transfer*—Guy E. Dutter, N. Girard, from Warren County.

Lackawanna: *New Member*—Howard L. Vail, 516 Spruce St., Scranton.

Lycoming: *New Member*—B. Meyers Yost, Linden.

Montgomery: *New Member*—A. J. Craig, Fort Washington; Joseph M. Ellenberger, Norristown.

Philadelphia: *New Members*—Franklin G. Ebaugh, Philadelphia Hospital, 34th and Pine Sts.; Reynold S. Griffith, 1302 Pine St.; Meyer Sabel, 444 So. 62nd St.; Dorothy W. Weiss, 1728 Memorial Ave., Philadelphia. *Deaths*—Gordon M. Christine (Univ. of Penna., '80), of Philadelphia April 17, aged 65; John H. Egan (Medico-Chirurg. Coll., '92), of Philadelphia, April 26, aged 50; Archibald F. Targette (Jeff. Med. Coll., '93), of Philadelphia, April 25, aged 65; Maurice L. Mallas (Univ. of Penna., '18), of Philadelphia, April 6, aged 33.

Schuylkill: *Death*—Katrina Freudenberger (Woman's Med. Coll., '98), of Tamaqua, March 9.

Venango: *Death*—Theodore H. Jones (Univ. of Pgh., '05), of West Hickory, April 28, aged 44.

Washington: *New Member*—William F. Keck, Avella.

Westmoreland: *New Members*—Howard H. Hamman, Greensburg; Earl B. Gilbert, Scottdale.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
Harrisburg, Pa.

PROBLEMS CONCERNING THE WORKMEN'S COMPENSATION ACT AND THE SURGEON

A discussion of the effects of the Workmen's Compensation Act has been presented from time to time since it began operation January 1, 1916. Sufficient time has elapsed to have developed the several good points which this act has brought to the people of the state as well as the profession of medicine. It has also afforded time to develop the faults of which an act of this type must of necessity have a few.

During the session of the legislature of 1919 the medical provisions of the act furnishing medical and surgical service to the employee received considerable attention on the part of the profession and as a result was amended, giving the surgeon the opportunity to provide more and better service to the employee. After some time had elapsed following the amendment, which provided that the surgeon should receive a maximum of $100.00 for thirty days' treatment of an employee and that the hospital should receive the same amount, some controversy has arisen as to the intent and purpose of paragraph "E" of Section 306 of the act. We have waited some time for a decision to be made regarding this paragraph, and it would seem, if no decision is made on the part of the Compensation Board or through a case tried in the courts of the state, that at the next session of the legislature an effort should be made to clarify the meaning of this paragraph.

A statement recently appeared in the press, which announced the ruling of Chairman Harry A. Mackey of the State Compensation Board. This ruling was to the effect that in the case of an injured person under the Compensation Act, if treated by a surgeon in the ward of a hospital to which the surgeon is attached as a member of the staff, said surgeon cannot collect for such treatment unless a separate contract exists with the employer of said employee. It was stated by the Chairman of the Workmen's Compensation Board that physicians and surgeons accept positions on hospital staffs for the experience and prestige which such positions give and they render no bills to ward patients, and it is claimed by the chairman that in that way they gain no right in a compensation case to charge unless a contract exists.

This decision is of vital interest to the surgeon in compensation cases, especially if he is in any manner attached to a hospital service. This decision affects the physicians adversely and should be more than a real reason for the need to amend the Compensation Act as it was amended in 1919.

Pennsylvania has a good compensation act in many ways. It is, however, limited in its provisions for a certain class of injuries, which produce convalescence and which of necessity require continued attention on the part of the surgeon and frequently continued hospital care. Many states provide for this class of cases by furnishing a continuance of the medical and surgical service, medicine and supplies. There is a very valid reason for making an effort to amend the act in Pennsylvania so that upon application of the employee and his attending physician a review of the case may be made by the Compensation Board and the time of treatment extended to the employee, whereby his surgeon and the hospital may continue treatment and be paid for such service.

The contention is that the employee should receive service until relieved or cured of the disability, but in order to meet the problem at least half way, we would suggest that another thirty days be added to that which is now provided for under the act and an equal amount of money appropriated for the care of the patients under the present provisions.

In Section 307 through some peculiar method of reasoning it was determined that should a patient receive an injury and be treated by a surgeon or in a hospital, and such injury produce death within ten days of the date of injury, no compensation should be allowed the surgeon or the hospital. Fortunately, but few companies have taken advantage of this provision, and in most instances have paid for the care of patients whether death ensued or not. However, this condition should not exist in the law, and it is suggested that an amendment be instituted wiping out such a provision whereby the surgeon and the hospital may not obtain what is justly due them for the care of injured employees.

It is a well-known fact that a greater degree of dissatisfaction would exist and more complaints would be made regarding the Compensation Act were it not for the fact that a large percentage of surgeons are employed to care for cases until the disability has ceased in case of injury. Many men are on full-time salary and others are employed to give adequate medical and surgical service as long as required. It is to be hoped that those who practice in localities where their services are required industrially, will avail themselves of the opportunity to present their views during the remainder of the year so that those who make an effort to present to the legislature such features as will improve the medical provisions of the Workmen's Compensation Act may have constructive criticism to act upon.

PROPOSED REVISION OF THE CONSTITUTION AND BY-LAWS*

Following is the majority report of the committee appointed to revise the Constitution and By-Laws of the Medical Society of the State of Pennsylvania, which is published in accordance with the provision set forth in the present Constitution and By-Laws:

CONSTITUTION

Article I.—Name

The name and title of this organization is The Medical Society of the State of Pennsylvania.

Article II.—Purposes of This Society.

The purposes of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Pennsylvania; to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment **[and enforcement]** of just medical laws: to promote friendly intercourse among physicians; to protect them against imposition and to enlighten and direct public opinion in regard to the great problems of **[state medicine]** *public health and hygiene,* so that the profession shall become more useful to the public in the prevention and management of disease and in prolonging and adding to the comfort of life.

Article III.—Component Societies

Component societies shall be those county medical societies, whose several constitutions and by-laws have been approved by this Society.

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*Additions to the text printed in italics. Deletions from present text printed in brackets.

Article IV.—Membership

Section 1.—The membership of this Society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this Society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

[Explanatory Note: A resolution was unanimously adopted that those members who were not now (September, 1919) citizens of the United States should be given six years (or until October. 1925) to complete their citizenship, and that anyone who had taken out his first citizenship papers should be considered eligible for membership.] *Physicians otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within six years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.*

Sec. 2.—Members whose *annual* assessments are received by the **[Secretary]** *Secretary-Treasurer* of this Society on or before March 31st, shall be entitled to all the privileges of this Society for the current year. One whose assessment is received after March 31st, **[shall be entitled to all the privileges of this Society except that he]** shall not be entitled to any benefit from the Medical Defense Fund from January 1st **[up]** to the date of the receipt by the **[Secretary]** *Secretary-Treasurer* of this Society of his name and assessment. **[The per capita assessment for new members elected and reported after July 1st, 1921, shall be one-half the yearly per capita assessment.]** *The annual assessment of new members, elected and reported between July 1st and November 1st, shall be one-half the annual assessment. Assessments received for new members elected and reported in November and December shall be the full annual assessment, which shall cover the assessment for the following calendar year.*

Sec. 3.—Each member in attendance at the annual session of this Society shall enter his name on a registration blank, indicating the component county medical society of which he is a member. When his right to membership has been verified by the official roster of this Society, he shall have a right to all the privileges of membership at that session. No member shall take part in any of the proceedings of the annual session until he has complied with the provisions of this section.

Sec. 4.—Any person who is under sentence of suspension or expulsion from a component county medical society or whose name has been dropped from its roll of members shall not be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 5.—Delegates to this Society from any state society entitled to representation in the American Medical Association shall, by presenting certificates of delegation duly signed, be entitled to seats and to participate in the scientific business of this Society. They shall not be entitled to vote, nor to hold office, nor be eligible to membership.

Sec. 6.—Any physician of reputable standing not a resident of Pennsylvania, but a member of his own state or territorial medical association, after an introduction by a member present, may by vote of a general meeting or of a section, be accorded the privilege of participating in the scientific discussions.

Sec. 7.—Any distinguished physician not a resident of this state but a member of his own state or territorial medical association may be elected an honorary member of this Society by the House of Delegates ,by a three-fourths vote at any annual session. Not more than two may be thus elected in any one year.

Article V.—House of Delegates

The House of Delegates shall be the legislative body of this Society, and shall be composed of: (1) Delegates elected by the component county medical societies: each component county medical society shall be entitled to send to the House of Delegates each year one delegate for every one hundred of its members or fraction thereof. (2) The presidents of the component county medical societies, or, in the absence of the president, the secretary of the component county medical society. (3) The President of this Society, and (4) ex officio the Trustees, **[the Secretary and the Treasurer]** *the Secretary-Treasurer* but without the right to vote.

If any component county medical society is without representation at the close of the roll call of the second meeting of any session of the House of Delegates, then the members registered in attendance from that county may select from their number the number of delegates which such county is regularly entitled to elect; if but one member is registered he shall be seated as the representative of that county. When any delegate is once seated, no change may be made during the session. No individual member shall be entitled to more than one vote.

No individual, occupying an ex officio membership in the House of Delegates, shall be seated as a delegate with vote.

Article VI.—Sections

The House of Delegates may provide for a division of the scientific work of this Society into appropriate sections.

Article VII.—Sessions and Meetings

Section 1.—This Society shall **[hold an]** *convene in* annual session on the first Tuesday of October at such place as may be determined by the House of Delegates **[from year to year]**, and each session shall continue for three days, or longer if required, by the business of the Society. The House of Delegates may by a three-fourths vote, which may be taken by mail, change the time or place of the next annual session.

Sec. 2.—Special meetings, either of this Society or of the House of Delegates, shall be called by the President on petition of twenty delegates or one hundred members.

Article VIII.—Officers

Section 1.—The officers of this Society shall be a President, four Vice-Presidents, **[a Secretary; an Assistant Secretary; an Executive Secretary, full time; a Treasurer;]** *a Secretary-Treasurer,* an Assistant Secretary, ten Trustees, who are also Councilors, and as many *District* Censors as there are component county medical societies.

Sec. 2.—The officers, except the Trustees **[and Executive Secretary]**, shall be elected annually by the House of Delegates to serve for one year, or until their successors are elected and installed.

[Sec. 3.—No member of the House of Delegates shall be eligible for the office of President.]

Sec. 3 (Formerly Section 4).—Two Trustees shall be elected annually by the House of Delegates to serve for a period of five years. No Trustee shall be eligible to succeed himself after he has served two full consecutive terms. Each Councilor district shall be entitled to one Trustee. A Trustee must be a member of one of the component societies of the Councilor district which he represents.

Article IX.—Funds

Section 1.—Funds shall be raised by an equal annual assessment on each member of the several component county medical societies. The amount of the assessment is to be fixed by the House of Delegates annually. Funds may also be raised by voluntary contributions and in any other manner approved by the House of

Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of this Society for publications and for such other purposes as will [**promote the welfare of the profession**] *further the interests of this Society.*

SEC. 2.—Each year, out of the funds of this Society, the Trustees shall appropriate a sum not to exceed $1.00 for each member to be set aside by the [**Treasurer**] *Secretary-Treasurer* as a special fund to be known as the Medical Defense Fund. This fund shall be kept separate from other moneys and may be invested by the [**Treasurer**] *Secretary-Treasurer* under the direction of the Board of Trustees and shall be used only for the legitimate expenses of members threatened with or prosecuted for alleged malpractice; provided, however, that no member of this Society shall be entitled to the benefits of this fund who was not in resident practice in the State of Pennsylvania when the alleged act of malpractice was committed.

SEC. 3.—Each year, out of the funds of this Society, the Trustees shall appropriate a sum not to exceed $1.00 for each member, to be set aside by the [**Treasurer**] *Secretary-Treasurer* as a special fund to be known as the Medical Benevolence Fund. This fund shall be kept separate from other moneys and may be invested by the [**Treasurer**] *Secretary-Treasurer* under the direction of the Board of Trustees, and shall be used only for the relief of pecuniary distress of sick or aged members or the parents, widows, widowers or children of deceased members.

ARTICLE X.—REFERENDUM

SECTION 1.—A general meeting of this Society may by a two-thirds vote of the members present, order a general referendum on any question pending before or on any action taken by the House of Delegates, and when so ordered the House of Delegates shall submit such questions to the members of this Society, who may vote in person, or by mail, within fourteen days. The vote shall be received by the Chairman of the Board of Trustees and be counted by the President and [**Secretary**] *Secretary-Treasurer* of this Society and the result reported to the House of Delegates. If the vote is taken by mail, the vote to be valid must be participated in by a majority of the members of this Society to determine any question when it shall be binding upon the House of Delegates.

SEC. 2.—The House of Delegates may, by a two-thirds vote, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

ARTICLE XI.—SEAL

SECTION 1.—This Society shall have a common seal, with power to break, change or renew the same at pleasure.

SEC. 2.—The seal shall contain the monogram "A. M. A." and "1847," within a circle on a keystone, at the sides of which shall appear: "Organized, 1848; Chartered, 1890," and the whole surrounded by a double circle containing the words, "Medical Society of the State of Pennsylvania."

ARTICLE XII.—AMENDMENTS

Proposals for amendments or alterations to this Constitution may be offered at any annual session or during the interim; if offered during the interim, such proposals must be sent to the [**Secretary**] *Secretary-Treasurer* of this Society at least four months before the next annual session. All proposals for amendments or alterations must appear either in the published minutes of the annual session or must be published in the Journal of this Society at least three months before the next annual session; and all such proposals for amendments or alterations must appear in the official call for the next annual session. If these conditions have been fulfilled, then the House of Delegates may adopt [**or reject**] such proposals by a two-thirds vote of the delegates present at the next annual session.

BY-LAWS

CHAPTER I.—GENERAL MEETINGS

SECTION 1.—All registered members may attend and participate in the proceedings and discussions of the general meetings and in the scientific work of the sections. The general meetings shall be presided over by the President, or by one of the Vice-Presidents, and at these meetings shall be presented the address of the President together with such scientific papers and discussions as may be arranged for in the program.

SEC. 2.—The general meeting or any of the sections may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and the public.

CHAPTER II.—HOUSE OF DELEGATES

SECTION 1.—The House of Delegates shall meet on the day before that fixed as the first day of the annual session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the general meetings. The order of business shall be arranged as a separate section of the program.

SEC. 2.—Each delegate, before being seated, shall deposit with the Committee on Credentials a certificate, signed by the president and secretary under seal of the component county medical society stating that he has been legally and regularly [**elected**] *designated* as a delegate to this Society.

SEC. 3.—Twenty delegates shall constitute a quorum.

SEC. 4.—The House of Delegates shall give diligent attention to and foster the scientific work and spirit of this Society, and shall constantly study and strive to make each annual session a stepping stone to future ones of higher interest.

SEC. 5.—It shall consider and advise as to the [**material**] interests of the [**profession and of the**] public [**in those important matters**], wherein it is dependent upon the profession, and shall use its influence to secure [**and enforce all**] proper medical and public health legislation and to diffuse popular information *of an educational nature* in relation thereto.

SEC. 6.—It shall make careful inquiry into the condition of the profession in each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such component county medical societies as already exist, and for organizing the profession in counties where societies do not exist. It shall specially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every legally qualified physician in every county of the state who is reputable has been brought under organized medical society influence.

SEC. 7.—It shall encourage graduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the component county medical societies.

SEC. 8.—It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

CHAPTER III.—CENSORIAL AND COUNCILOR DISTRICTS

SECTION 1.—The State of Pennsylvania shall be divided into nineteen Censorial Districts, and each district shall have a separate board of censors. The board shall be formed by the House of Delegates of this Society electing one Censor from each component county medical society in the district. Each component county medical society is requested to present to the House of Delegates, for its consideration, the name of a suitable member for District Censor. Each district shall hold a district meeting at least once every two years, for the purpose of increasing acquaintance, good fellowship and organization among the physicians of the district. Only members of a component medical society in that district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component county medical society shall be invited to the meetings. The districts shall be constituted as follows:

First: Philadelphia.
Second: Chester and Delaware.
Third: Bucks, Lehigh, Monroe and Northampton.
Fourth: Berks, Montgomery and Schuylkill.
Fifth: Dauphin, Lancaster and Lebanon.
Sixth: Adams, Cumberland, Franklin, Fulton and York.
Seventh: Huntingdon, Juniata, Mifflin and Perry.
Eighth: Bedford, Fayette, Somerset and Westmoreland.
Ninth: Allegheny, Greene and Washington.
Tenth: Beaver, Lawrence and Mercer.
Eleventh: Crawford, Erie and Warren.
Twelfth: Cameron Elk, McKean and Potter.
Thirteenth: Butler, Clarion, Forest and Venango.
Fourteenth: Armstrong, Indiana and Jefferson.
Fifteenth: Clinton, Lycoming, Tioga and Union.
Sixteenth: Blair, Cambria, Center and Clearfield.
Seventeenth: Bradford, Sullivan, Susquehanna and Wyoming.
Eighteenth: Columbia, Montour, Northumberland and Snyder.
Nineteenth: Carbon, Lackawanna, Luzerne, Pike and Wayne.

Sec. 2.—The Censors of each district shall consider every case of appeal from the decision of a component county medical society by a member who has been censured, suspended, or expelled, provided that the appeal be made within three months after the censure, suspension or expulsion. They shall report in writing their decision thereon to the county medical society, and also to the Councilors of this Society. They shall consider and dispose of all questions affecting the Principles of Medical Ethics that may be referred to them either by a component county medical society or by this Society. The decision of the Censors in every case must be signed by a majority of the board. In case a district contains an even number of Censors, and a tie vote results, the Councilor for that district shall cast the deciding vote. Any appeal or judicial question arising in a district composed of less than three county societies shall be referred directly to the Judicial Council of this Society.

Sec. 3.—The state shall be divided into ten Councilor Districts and each district shall be entitled to one Councilor. The Councilor Districts shall be constituted as follows:

First: First Censorial District.
Second: Third and Nineteenth Censorial Districts.
Third: Second and Fourth Censorial Districts.
Fourth: Fifth and Sixth Censorial Districts.
Fifth: Seventh and Sixteenth Censorial Districts.
Sixth: Eighth and Ninth Censorial Districts.
Seventh: Tenth and Eleventh Censorial Districts.
Eighth: Twelfth and Seventeenth Censorial Districts.
Ninth: Thirteenth and Fourteenth Censorial Districts.
Tenth: Fifteenth and Eighteenth Censorial Districts.

Chapter IV.—Election of Officers.

Section 1.—All elections shall be by ballot of the House of Delegates and a majority of votes cast shall be necessary to elect.

Sec. 2.—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the second day of the general session. This order of business may be postponed to a definite time and place by a two-thirds vote of those present. In the election of officers of this Society, the **[Secretary]** *Secretary-Treasurer* shall call the roll of members of the House of Delegates, and each member, as his name is called, shall come forward to the President's desk and deposit his ballot. **[When counting the ballots the President shall call two members forward to assist and the Secretary shall call a member to keep a duplicate tally.]** *The President shall then appoint three members as Tellers, who shall count the ballots under the supervision of the Secretary-Treasurer.*

Sec. 3.—Any person known to have solicited votes for, or sought after, any office within the gift of this Society shall be ineligible for any office for two years.

Sec. 4.—The Chairman and Secretaries of all sections provided for by action of the House of Delegates shall be elected by the several sections at executive meetings held on the second day of the annual session.

Sec. 5.—Installation of Officers.—The officers of this Society, except the President, shall assume their duties at the close of the last meeting of the annual session at which they are elected.

Sec. 6.—Installation of the President.—The President shall be installed at the first general meeting of the annual session following that at which he was elected.

Chapter V.—Duties of Officers

Section 1.—The President shall preside at all meetings of this Society, and at the meetings of the House of Delegates. At the first general meeting of the annual session following his election he shall deliver an address on such matters as he may deem of importance to this Society. He may at any time make suggestions in writing to the House of Delegates or to any special or standing committee. He shall be ex officio a member of the Board of Trustees and Councilors. He shall be ex officio a member of all standing or special committees.

Sec. 2.—The Vice-Presidents shall assist the President in the performance of his duties; during his absence or at his request one of them shall officiate in his place. In case of the death, resignation or removal of the President, the vacancy shall be filled by the ranking Vice-President.

Sec. 3.—The **[Secretary]** *Secretary-Treasurer* shall attend the general meetings of this Society, the meetings of the House of Delegates and of the Board of Trustees. He shall have no vote in the Board of Trustees, nor in the House of Delegates **[unless seated as a delegate]**. He shall keep the minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to this Society **[except such as properly belong to the Treasurer]**. He shall receive and receipt for the **[per capita]** *annual* assessments from the component county medical societies **[and forward at least every two weeks to the Treasurer of this Society all funds of this Society that have come into his hands]**. He shall provide for the registration of the members and the delegates at the annual session. He shall aid the Councilors in the organization and improvement of component county medical societies, and in the extension of the **[power]** *influence* and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistance as may be ordered by the Trustees, and shall make an annual report to the House of Delegates. He shall supply each component county medical society with the necessary receipts and blanks for making its report. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. *He shall hold all funds of this Society, together with bequests and donations in such banks or trust companies as shall be designated by the Board of Trustees. He shall pay money out of the treasury on written orders signed by the President and approved by the Chairman of the Finance Committee of the Board of Trustees. He shall render annually to this Society full account of the state of funds. He shall give bond of a surety company in the sum of $20,000.00 for the faithful performance of his duties.*

Sec. 4.—The Assistant Secretary shall act as an aid to the **[Secretary]** Secretary-Treasurer, especially during annual sessions, and may take his place when necessary as a temporary Secretary.

[Sec. 5.—The Executive Secretary shall organize the medical profession for efficient action on proposed or pending legislation of interest to the general public and the medical profession. It shall further be his duty to organize the machinery for the investigation of illegal practitioners of the healing art in the Commonwealth of Pennsylvania. He shall be appointed by the Board of Trustees. He shall act with the Committee on Public Health Legislation and shall be ex officio a member of this Committee. Adequate salary and other expenses of his office shall be provided for by the Board of Trustees.]

[Sec. 6.—The Treasurer shall hold all funds of this Society together with bequests and donations and deposit the same in such banks or trust companies as may be designated as depositories by the Board of Trustees. He shall pay money out of the treasury only on written orders signed by the President and countersigned by the Secretary. He shall render annually to this Society a full account of the state of funds. He shall give bond of a surety company in the sum of $15,000 for the faithful performance of his duties.]

Sec. 5 (Formerly Section 7).—At the first meeting of the Board of Trustees after the annual session of this Society, it shall organize by electing a Chairman and a Clerk, who shall keep a record of the minutes in the absence of the **[Secretary]** *Secretary-Treasurer.* The Chairman shall appoint *a Finance Committee of three* and such committees as may be necessary or desirable. The Board of Trustees shall have charge of all properties and the financial affairs of this Society. It shall recommend to the House of Delegates the amount of the annual assessment. It shall be the duty of the Board of Trustees to provide for and superintend the publication of the PENNSYLVANIA MEDICAL JOURNAL and of all proceedings, transactions, and memoirs of this Society. It shall have full discretionary power to omit from the PENNSYLVANIA MEDICAL JOURNAL in part or in whole, any paper that may be referred to it for publication. It shall appoint **[a general manager and]** an Editor of the Journal **[which two positions may be held by one person]** and such assistants as may be necessary, and shall determine the salaries and the term and conditions of their **[employment]** *appointment.*

It shall exercise general supervision over the conduct of all Committees in the interval between sessions.

It shall be empowered to employ such administrative representative, or representatives, for the Society as shall be needed to conduct the work outlined for them by the Committee on Public Relations, or any other constituted or appointed committees. These representatives' activities shall be only of an executive nature, since all policies of this Society shall originate within the House of Delegates, the Board of Trustees, or within appointed or constituted committees. The term of employment of such representatives shall not exceed one year; the salary and conditions of their employment shall be determined by the Board of Trustees.

(Formerly Section 8.)—The Board of Trustees shall have full control of all arrangements for the annual session. It may **[appoint]** *employ* a Manager of Sessions and Exhibits, who shall carry out all the business details incident to the annual session of this Society. He shall provide suitable accommodations for the meeting places of this Society, *Board of Trustees* and the House of Delegates and the respective committees. He shall enlist the coöperation of the local Committee on Arrangements, and approve all its actions before this Society shall be responsible for expenditures recommended by **[it]** *the local committee.* He shall report an outline of the arrangements to the **[Secretary]** *Secretary-Treasurer* for publication in the program and in the **[State Journal]** *Pennsylvania Medical Journal,* and make such additional announcements during the session as occasion may require. He shall render to the Board of Trustees a full and itemized account of all receipts and expenditures on account of the annual session, and **[pay over to the Treasurer any balance left in his hands]** *he shall, from time to time (at proper intervals) remit moneys received to the Secretary-Treasurer. All items of expense in connection with the annual session shall be paid out of the Treasury on written orders signed by the President and approved by the Chairman of the Finance Committee of the Board of Trustees, excepting such small items as may be paid from a "Revolving Petty Cash Fund," which may be provided for this purpose.* He shall receive a salary to be fixed annually by the Board of Trustees. He shall give a bond of a surety company in the sum of $1,000.00 for the faithful performance of his duties.

The Board of Trustees may, at their discretion, combine any of these designated positions in a manner which they may deem in the best interests of this Society.

All resolutions or recommendations of the House of Delegates pertaining to the expenditures of money must be approved by the Board of Trustees before the same shall become effective. During the annual session of this Society, the Board shall hold meetings as often as may be deemed necessary and all matters referred to it by the House of Delegates shall be reported on within twenty-four hours, if so requested by the House of Delegates. The Board of Trustees shall have the accounts of the **[Secretary, Treasurer]** *Secretary-Treasurer* and the officers of the *Journal* audited annually or oftener if deemed desirable and shall make an annual report on the same to the House of Delegates. This report shall specify the character and cost of all publications of this Society during the year and the amount of all properties belonging to this Society.

In case of vacancy in the office of **[Secretary or Treasurer]** *Secretary-Treasurer* on account of death, or otherwise, the vacancy shall be filled by the Board of Trustees until the next annual session of the House of Delegates.

The Board of Trustees shall **[fix]** *designate* the salary of the **[Secretary, the Treasurer and the Executive Secretary]** *Secretary-Treasurer.* Regular meetings of the Board shall be held immediately after the annual session of this Society and on the first Wednesday in the month of February of each year. Special meetings of the Board may be called at any time by the Chairman or by six members of the Board. Six members of the Board shall constitute a quorum. During the intervals between the sessions of the House of Delegates, the Board of Trustees shall supervise the action of committees constituted by the action of the House of Delegates.

Sec. 6 (Formerly Section 9).—BOARD OF COUNCILORS.—Each Councilor shall be **[organizer and peacemaker]** *judicial representative of this Society* for a district consisting of certain counties. He shall visit the counties in his district at least once a year, for the purpose of organizing component county medical societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of component county medical societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor, in the line of duties herein imposed, may be allowed on a properly itemized statement; but this shall not be construed to include his expenses in attending the annual session of this Society.

Sec. 7 (Formerly Section 10).—The Board of Councilors shall be the Judicial Council of this Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component county medical societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the Council without discussion. It shall decide all questions **[of discipline]** affecting the conduct of members or component county medical societies, on which an appeal is taken from the decision of a board of censors, and its decision in all such matters shall be final.

Sec. 8 (Formerly Section 11).—In sparsely settled sections it shall have authority to organize the physicians of two or more counties into a society. Such societies, when organized and after their constitution and by-laws have been approved by this Society, shall be entitled to all rights and privileges provided for component county medical societies.

Sec. 9 (Formerly Section 12).—The Board of Councilors shall select a member of the bar of Pennsylvania as Legal Counsel of this Society, and is empowered to pay such counsel an annual retaining fee. To the Legal Counsel shall be submitted all suits for alleged malpractice brought against members of this Society and he shall be asked to endorse local counsel suggested **[or engaged]** by the Councilor to defend such suits. To him also shall all proposed appeals to higher courts be submitted. The proper fees for defending members of this Society in suits for alleged malpractice shall be paid out of the Medical Defense Fund, provided that the member has placed his case in the hands of this Society in accordance with the regulations adopted by the Council and approved by this Society, as follows:

a. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank which can be secured **[either from the Secretary of his county medical society,]** from the **[Secretary]** *Secretary-Treasurer* of the State Medical Society or from the Councilor for the district. The Society will not undertake the defense of any member unless his application is made within thirty days after service of summons.

b. The application must be endorsed by unanimous vote of all the censors of his county medical society present at a special meeting called for this purpose, after a rigid examination of all the facts in the case, not only as regards the applicant's membership and standing in his society but also as regards the worthiness of the applicant's case. It should be understood that the endorsement of the censors of a county medical society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return.

c. As soon as the application has received the endorsement of the censors of the county medical society, it should be sent to the Councilor of the District for his endorsement. The Society will not be responsible for attorney's fees incurred in the defense of any member, the defense of whom has not been approved by the Councilor for the district.

d. After the application has received the endorsement of the county medical society censors and the Councilor for the District, the management of the member's defense will rest with a committee consisting of the Councilor for the district, the President and the **[Secretary]** *Secretary-Treasurer* of the State Society.

e. The Councilor for the district or the **[Secretary]** *Secretary-Treasurer* of the State Society or both shall then arrange and conduct a conference with the legal representatives and other parties concerned, having in view the thorough discussion of all circumstances pertaining to the threatened suit and the possibility of its withdrawal. The Councilor or **[Secretary]** *Secretary-Treasurer* or both upon approval by the Trustees shall be paid for their time expended in this particular service and have refunded their legitimate expenses.

f. The applicant should sign a contract vesting in the Committee of Council sole authority to conduct the defense of his suit, and he should agree to make no compromise or settlement of the case without the consent of the Councilor of his district given in writing.

g. The State Society will not undertake the defense of any member who, after investigation by the censors and Councilor for the district, is believed guilty of criminal abortion, feticide, homicide or any criminal act, or who has not conformed to the recognized ethical laws in regard to these cases. It will only defend suit brought in the course of legitimate professional work.

h. The State Society will not pay any expenses for serving subpœnas nor the expense of witnesses residing within the county, nor will it pay judgment for fine awarded or imposed by the jury or court.

Chapter VI.—Committee on Public Relations

The Committee on Public Relations shall consist of nine elected members, three of whom are elected annually by the House of Delegates to serve for three years, and ex officio the President, the President Elect, the Chairman of the Board of Trustees, the Chairman of the Finance Committee of the Board of Trustees, and the Secretary-Treasurer. It shall organize annually and elect its Chairman. It may recommend to the Board of Trustees the employment or appointment of such administrative representative, or representatives, as may be needed, and who shall serve under the direction of the Committee. This Committee shall represent the Society in securing legislation in the interest of public health and scientific medicine. It shall conduct and direct campaigns of public education in matters of public health and hygiene. It shall assist the component societies in the conduct of similar campaigns and shall act as a source of information to individuals, or civic or state bodies, who seek enlightment on matters of public health, medical legislation or scientific medicine. It shall act under the direction of the House of Delegates and in the interim between meetings it is authorized to institute such activities as, in its judgment, will further the purposes of this Society. The President may appoint committees to deal with special problems which may arise, such committees to work in conjunction with the Public Relations Committee.

Chapter VII (Formerly Chapter VI).—Committees

Section 1.—The standing committees of this Society shall be as follows, the appointments, when not otherwise provided for, to be made annually by the President:

A Committee on Scientific Work.

[A Committee on Public Health Legislation.]

A Committee on Society Comity and Policy.

[A Committee on Health and Public Instruction.]

A Committee on Benevolence.

A Committee on Arrangements.

A Press Committee.

Sec. 2.—The Committee on Scientific Work shall consist of the President, **[Secretary]** *Secretary-Treas-*

urer, Editor, Manager of Sessions and Exhibits, Chairman of the Committee on Arrangements, Chairman and Secretaries of the Sections, *Chairman of the Finance Committee of the Board of Trustees*, and the Chairman of the Committee on Scientific work appointed annually by the President. It shall determine the character and scope of the scientific proceedings of this Society for each session, subject to the instructions of the House of Delegates. At least thirty days previous to each annual session it shall prepare a program to be issued by the **[Secretary]** *Secretary-Treasurer*, announcing the order in which papers and discussions shall be presented.

[Sec. 3.—The Committee on Public Health Legislation shall consist of five members and the President and the Secretary. This committee shall represent the Society in securing and enforcing legislation in the interest of public health and scientific medicine. It shall act under the directions of the House of Delegates, and in the interim between the meetings of the House of Delegates it is authorized to undertake such activities as in its judgment will further the purposes it represents.]

Sec. 3 (Formerly Section 4).—The Committee on Society Comity and Policy shall consist of five members. This committee shall keep informed concerning matters between this Society and the American Medical Association, between this Society and the component county medical societies, and between component county medical societies and their members, and shall recommend to the House of Delegates such action as will best uphold the dignity and honor of the medical profession, exalt its standards, extend its sphere of usefulness and promote the advancement of medical science.

It shall be the duty of the committee, after careful consideration, to submit to the House of Delegates a list of nominees for delegates and alternates to the House of Delegates of the American Medical Association. These nominations shall not preclude nominations from the floor of the House of Delegates.

[Sec. 5.—The Committee on Health and Public Instruction shall consist of five members. It shall be the duty of this committee, subject to the House of Delegates, to attempt to bring together the lay people and the profession, to increase confidence in scientifically trained physicians and to unite the public and the medical profession in a campaign for better health conditions.]

Sec. 4 (Formerly Section 6).—The Committee on Benevolence shall consist of the **[Secretary, the Treasurer,]** *Secretary-Treasurer* and three members to be selected annually by the Trustees, at least one of whom shall be a Trustee. This committee shall select its own chairman, secretary and treasurer, and shall have absolute and confidential jurisdiction over the distribution of such part of the Medical Benevolence Fund as may be placed in its hands. No money shall be paid from its treasury except on warrant signed by the chairman and secretary of the committee, and an annual audit of its accounts shall be made by a committee of the Trustees, the names of the beneficiaries being omitted. All beneficiaries shall be designated by number, and after each annual audit all communications tending to show the personality of the same shall be destroyed. This committee may solicit subscriptions, donations and legacies to be added to the principal of the Medical Benevolence Fund. It may also receive subscriptions to be used for the relief of members in distress from the effects of any special catastrophe.

Sec. 5 (Formerly Section 7).—The Committee on Arrangements shall be appointed by the President on the recommendation of the component county medical society of the county in which the annual session is to be held. The committee shall effect an organization and coöperate with and work under the advice and supervision of the Manager of Sessions and Exhibits in making arrangements for the annual session.

Sec. 6 (Formerly Section 8).—The Press Committee shall consist of the **[Secretary]** *Secretary-Treasurer*, the Manager of Sessions and Exhibits and the chairman of the local Committee on Arrangements. This committee shall have power to add to its number as needed and shall designate the duties of each member so appointed. This committee shall have general censorship over all matters for the public press in connection with the transaction of the general meetings, the scientific sections and the House of Delegates.

Chapter VIII (Formerly Chapter VII).—Committees of the House of Delegates

Section 1.—The regular committees of the House of Delegates shall be as follows, the appointments to be made annually by the President Elect early in September from the members already reported as members of the House of Delegates for the coming session of this Society:

A Committee on Credentials.

A Reference Committee on Reports of Officers and Standing Committees.

A Reference Committee on Scientific Business.

A Reference Committee on New Business.

A Committee on Place of Meeting.

Sec. 2.—The Committee on Credentials of the House of Delegates shall consist of three members of the House of Delegates for the coming session of this Society, to which shall be referred all questions regarding the registration and credentials of the delegates.

Sec. 3.—The Reference Committee on Reports of Officers and Standing Committees shall consist of three members of the House and to it shall be submitted all reports of officers and committees, not otherwise specifically referred to other committees, for its consideration and recommendation before action may be taken by the House.

Sec. 4.—The Reference Committee on Scientific Business shall consist of three members of the House and to it shall be referred all new business of a scientific nature, not otherwise specifically referred to other committees **[for its consideration and recommendation]** before action may be taken by the House.

Sec. 5.—The Reference Committee on New Business shall consist of three members of the House and to it shall be referred resolutions introducing ordinary new business, not specifically referred to other committees, before action may be taken by the House. This committee is specially charged with all resolutions conveying the thanks of the Society.

Sec. 6.—The House of Delegates on recommendation of the Committee on Scientific Work may authorize special commissions to undertake scientific investigations during the interim between the meetings of the House of Delegates. Such commissions shall be automatically discharged unless specifically continued by the House of Delegates.

Sec. 7.—*The Committee on Place of Meeting shall receive and consider invitations for the next annual session. It shall report its recommendations for action by the House of Delegates on the morning of the second day of the annual session. The report of this committee shall be the first order of business after the election of officers.*

Chapter IX (Formerly Chapter VIII).—County Societies

Section 1.—All county societies now in affiliation with this Society are component county medical societies. Those which may hereafter be organized in this state which shall have adopted principles of organization, not in conflict with this Constitution or these By-Laws, shall on approval of the Censors of the district become component parts of this Society. Only one component medical society from any one county shall be affiliated with this Society.

Sec. 2.—As rapidly as can be done after the adoption of this Constitution and these By-Laws, a medical society shall be organized in every county in this state, in which no component society exists.

Sec. 3.—Each component county medical society shall judge of the qualifications of its own members; but, as such societies are the only portals to this Society and to the American Medical Association, due diligence should be observed so that only reputable and legally registered physicians who are citizens of the United States are admitted to membership.

Sec. 4.—Any physician who may feel aggrieved by the action of a component county medical society in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Censors of the district for their decision.

Sec. 5.—In hearing appeals the Censors may admit oral or written evidence, as in their judgment will best and most fairly present the facts; but in every appeal, efforts at conciliation and compromise shall, on the part of the individual Censors and of the Board, precede all such hearings.

Sec. 6.—When a member in good standing in any component county medical society moves to another county in this state, he shall, on request, be recommended by his society to the component county medical society into whose jurisdiction he moves, for election without the delay attendant upon ordinary applications for membership.

Sec. 7.—Any physician living near a county line may hold his membership in the county most convenient for him to attend, on permission of the Councilor of his district.

Sec. 8.—Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county. Systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it includes every qualified physician in the county.

Sec. 9.—At some meeting at least **[six weeks]** *sixty days* in advance of the annual session of this Society, each component county medical society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred of its members and for each fraction thereof in good standing on July 1st preceding the session. The Secretary of the component county medical society shall send a list of such delegates to the **[Secretary]** *Secretary-Treasurer* of this Society immediately after their election.

Sec. 10.—The Secretary of each component county medical society shall keep a roster of its members and of the nonaffiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of registration or license to practice in the state, and such other information as may be deemed necessary. In keeping such a roster, the secretary shall note any change in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall endeavor to account for every physician who has lived in the county during the year.

Sec. 11.—The Secretary of each component county medical society shall during or before January of each year furnish the **[Secretary]** *Secretary-Treasurer* of this Society with a list of the officers and members of his county medical society, and shall report new members as soon as they are qualified as members of his society. He shall send the amount of the members' annual assessment at the same time their names are reported and also duplicates of the receipts given to the members of his society. He shall promptly notify the **[Secretary]** *Secretary-Treasurer* of this Society of any change in the addresses of the members of his society, and of losses in membership, giving the cause, such as death (with date), resignation, removal (with present address), or expulsion.

Sec. 12.—Each component county medical society shall notify the **[Secretary]** *Secretary-Treasurer* of this Society of any new By-Laws or rules that have been adopted, and furnish for publication in the Journal of the State Society brief notes of its deceased members. Each component county medical society shall designate one of its members to act as reporter for the Journal, who shall furnish such reports of the meetings of his society and such professional news as may be thought desirable for publication.

Chapter X (Formerly Chapter IX).—Miscellaneous

Section 1.—No address or paper before this Society, except those of the President and invited guests, shall occupy more than fifteen minutes in its delivery. In the discussion of any papers, no member shall speak longer than five minutes, except by unanimous consent.

Sec. 2.—All papers read before this Society or any of the sections shall become the property of this Society. Each paper shall be deposited with the **[Secretary]** *Secretary-Treasurer* when read.

Sec. 3.—The deliberations of this Society shall be governed by parliamentary usage, as contained in Robert's Rules of Order, when not in conflict with this Constitution or these By-Laws.

Sec. 4.—The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

Sec. 5.—At each annual session, a public reception shall be provided as part of the program, in honor of the President of the Society. This function shall be under the direction of the **[Secretary]** *Secretary-Treasurer* and the Manager of Sessions and Exhibits, and shall be paid for by this Society.

Sec. 6.—Any vacancy occurring in an appointive office shall be filled at once by appointment by the President *for the unexpired term.*

Any vacancy occurring in an elective office, *except in the case of the President Elect,* during the interim of *the* Annual Sessions, shall be filled by the Board of Trustees **[by election]** until the next regular session of the House of Delegates. *In the case of death or inability to serve of the President Elect the vacancy shall be filled at once by a special election by the House of Delegates.*

Chapter XI (Formerly Chapter X).—Amendments

These By-Laws may be amended at any annual session by unanimous consent, after lying over one day. If there be a dissenting voice, the amendment shall lie over for one year and take the course of amendments to the Constitution.

Respectfully submitted,

William H. Mayer, M.D., *Chairman;*
Joseph D. Findley, M.D.,
Jay B. F. Wyant, M.D.,
John B. McMurray, M.D.,
Robert E. Heath, M.D.

Pittsburgh, Pa., May 12, 1922.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntington—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sbaron.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

June, 1922

COUNTY SOCIETY REPORTS

BERKS—APRIL

Dr. Malcolm Z. Gearhart, Reading, presented a paper entitled "Diseases of the Thyroid." Some of the high lights follow:

Goiter may be unilateral or bilateral, and may be due to lime in the drinking water. It is more frequent in the female and usually occurs before puberty, during the menstrual period, or during pregnancy. Goiters occurring before puberty usually clear up, while those occurring after puberty are apt to be pathological and require treatment. Other causative factors are from nervous and intestinal origin. One surgeon, in cases due to colon infection, removed the colon instead of the goiter.

Goiters may be classified as toxic, or exophthalmic; and nontoxic, which may result in myxedema. Nontoxic goiters are the parenchymatous, the cystic and the vascular.

Exophthalmic goiter is due to overactivity or perversion of the activity of the thyroid gland. It is characterized by tremor, exophthalmos, enlarged thyroid and tachycardia. It is sudden in onset and rapid in growth, and is often due to physical trauma (such as fear), anemia, neuroses and psychoses. In toxic and exophthalmic goiter 71% have cardiac lesions. The treatment of this disease is always surgical—thyroidectomy or ligation of the cartoid artery. The results are usually good. Out of 19 thyroidectomies performed by Dr. Gearhart, 2 died, one from tetany. Tetany usually follows the removal of the parathyroids.

In contrast to goiter or hyperthyroidism there is cretinism or myxedema, characterized by loss of thyroid function. Cretinism may be congenital, in which instance life is short. It may be the result, of thyroid aplasia. thyroiditis or goiter. It is associated with retardation of mental and physical development. The face is turgid, pale and imbecilic, the lids swollen, the tongue protrudes and the lips pout. Myxedema is an edematous change in the subcutaneous tissue, associated with intellectual, mental and physical weakness. The gait is clumsy and muscular fatigue follows moderate exertion. The treatment is administration of thyroid extract. The powdered extract is very satisfactory.

In the discussion, Dr. Livingood brought out the following points: The progress of a case can be watched by noting the pulse, etc. Cystic and parenchymatous overgrowth are not benefited by the x-ray. In toxic hyperthyroidism the subjective symptoms, like difficulty in swallowing and moving the neck, respond first, while the last thing to improve is the enlargement and the exophthamos.

In response to the question: what harm can the x-ray do? he said that it can cause x-ray dermatitis, desquamation and bronzing of the skin. In one case treated by the x-ray the skin was tanned, while the goiter increased in size. In another case of adenoma of five years duration, the patient can move the head better, and there is no difficulty in swallowing or breathing. In one case of cystic goiter, six treatments gave no results. Two cases were much benefited, and in three other cases no impression was made by the x-ray. Dr. Livingood doubts if thyroid disorders can be cured by this means, but believes that good results have been obtained in malignant thyroid disease. He thinks there are natural remissions.

Dr. Israel Cleaver mentioned Dr. Thompson's treatment by ingestion of fermented milk as a cure for goiter.

Dr. Robt. M. Alexander gave a review of recent medical literature on the medical treatment of hyperthyroidism. He stated that he felt the most reliable treatment of hyperthyroidism was by the use of x-ray and surgery but that certain cases were medical cases; notably those who refused x-ray and surgical treatment, very early cases in which the diagnosis was indefinite and those cases which were too toxic for treatment by the surgeon or x-ray. He quoted from various writers as follows:

W. F. Howard, (Northwest Medicine, 1921): "The patient should rest in bed. Calcium (the citrate or other salt) is given with the idea of changing the iodine metabolism to calcium metabolism, therefore securing the least harmful goiter. Sodium phosphate or other salt of phosphorus is given because it lessens iodine metabolism, and consequently lessens the thyroid secretion. It is important to increase the diet to as great a caloric value as the patient can assimilate."

Friedenwald and Ruhrah (Saunders, 1919): "In cases of exolthalmic goitre any tendency to constipation should be relieved promptly. Foods that cause flatulence should be avoided. The metabolism of these patients is very greatly increased so that a patient at rest may have the requirements of a person at hard labor. The nitrogen equilibrium is maintained with difficulty and the body wastes rapidly. There may be alimentary glycosuria. There is a loss of phosphorus through the intestines and the amount of calcium excreted in the feces is increased. The patient with Graves' disease needs one and one-half to twice as much food as the ordinary individual of the same weight."

J. A. Sicard (Paris Medical Journal, December, 17, 1920): "For two weeks quinine sulphate was given in large doses (1.5 to 2 grams daily), the drug being pushed to the utmost limit short of producing tinnitus. This is followed by one week's treatment with sodium salicylate—2 to 4 grams daily—, an interval of eight days being allowed after each medicament. Salt free diet is obligatory, because sodium chloride hinders the curative action of calcium chloride."

Dr. Alexander further discussed the intrathyroid injections of boiling water (O'Day), specific serums, drainage and the mercury ion in cystic goitre (G. B. Massey.)

A case was cited in which toxic goitre disappeared after a copperhead snake bite.

Special emphasis was placed upon diet, and the use of calcium and iodine as the drugs of choice.

Clara S. Keiser, M.D., Reporter.

BLAIR

JANUARY—FEBRUARY—MARCH—APRIL

The Society met January 24, 1922, in regular session in our newly selected meeting place, the recently opened Penn Alto Hotel in Altoona. There were present 50 members who enjoyed the annual banquet which preceded the address of the evening by Dr. Henry K. Gaskill, of Philadelphia, Pa., who presented a most excellent discourse on "Occupational Dermatoses." This paper was very freely discussed and it is certain that our members gained some new data on this class of work.

The election of officers for the year 1922 followed and here is the result: president, W. S. Musser, Tyrone; 1st vice-president, Logan E. Hull, Altoona; 2nd vice-president, John H. Galbraith, Altoona; corresponding secretary, James S. Taylor, Altoona; secretary and treasurer, Chas. F. McBurney, Altoona. The censors remained the same as before, viz.: Drs. W. A. Nason, J. E. Smith, and S. I. McCarthy. The legislative committee is made up of Drs. W. A. Nason, H. H. Brotherlin and J. E. Smith. One new member was received, in the person of Dr. J. W. Hershberger of Martinsburg.

Throughout the year 1921 the Bulletin publishing committee consistently kept pushing, reminding, urging a better and fuller attendance, and if the January attendance is a forecast of our future monthly meetings, then the officers and pushers of the society will have no cause for regret.

On February 28th, we met again in the Penn Alto under the guidance of Dr. Musser, and the 32 assembled enjoyed a very interesting and truly instructive paper read by Dr. H. B. Replogle on "Psychology in Medicine and Surgery." All in attendance enjoyed the presentation, and the utterances of the speaker were greatly in accord with the discussion it aroused. Dr. S. Paul Taylor was duly elected a member at this meeting. It is the wish of the officers that we get at least one new member a month.

The March meeting was held on March 28th, with 30 of the regulars in attendance. The paper for the day was by our newest member, Dr. S. Paul Taylor, who presented a thesis on the "Use and Abuse of Corpus Luteum Extract in the Vomiting of Early Pregnancy." There have been very few papers read at any of our meetings which have excelled this both theoretical and practical paper. Dr. E. E. Neff of Altoona was welcomed back to the fold after spending the winter in California. Dr. W. H. Meminger of Juniata has just recovered from a severe illness. Dr. Chas. W. Noss of Altoona has been confined to his house since early last fall and his affable presence is missed at the meetings.

The April meeting was held on the 25th, in the Penn Alto, with an attendance of 35 members, so our wishes of January are being fulfilled and our attendance committee is to be congratulated. Dr. George E. Alleman was the speaker of the day and he gave a very excellent discourse on "Abdominal Crises from the General Practitioner's Viewpoint." Particular emphasis was placed on angina abdominalis. A free discussion of the many good points of the paper was enjoyed by all. The health of our county has never been better and the number of fishing and vacationing physicians is gradually increasing.

James S. Taylor, Corresponding Secretary.

BRADFORD—MAY

The Bradford County Medical Society met in the Green Free Library, Canton, May 9, and was called to order at 2:15 p.m. by vice-president George W. Hawk, with fourteen present, after having been entertained at dinner at the Packard House by Dr. A. E. Dann. The minutes of the meetings of March 14 and April 11 were read and approved.

Dr. A. E. Dann, Canton, read a paper on "Paratyphoid." Paratyphoid infections are acute febrile diseases caused by invasion in the blood stream by members of paratyphoid groups of organisms and are manifested clinically by a continued fever closely resembling typhoid or a gastroenteritis which may or may not be of a choleraic type. The two organisms that produce the majority of paratyphoid infections are Bacillus paratyphosus A and B. Their course and distribution outside of body are the same as that of typhoid except that the Bacillus paratyphosus is found in the flesh and intestinal tract of some domestic animals. Food is the most important medium of conveyance, while water is that of typhoid. The B. paratyphosus B are continually transmitted by meat foods, can be present in meat of diseased animals or in healthy meat contaminated by contact with diseased meat, or in intestinal contents of healthy animals or human carriers. Vegetable food may become contaminated and become the medium for transmission.

The disease is now frequently identified wherever bacteriological methods are applied in differential diagnosis of acute febrile diseases presenting symptoms of typhoid. Paratyphoid fever is much less common than typhoid. It is impossible to state how prevalent it is in this country, as only a small percentage of patients presenting symptoms of typhoid are checked up by the Widal test. Boycott estimates that in England about three per cent of the enteric cases are paratyphoid infections. In 1917-18 there were in the whole U. S. Army 1,065 cases of typhoid fever and 127 cases of paratyphoid, making a percentage of about 12.

No doubt we have all treated many cases of paratyphoid for typhoid, as clinical symptoms are so alike that positive diagnosis is impossible without bacteriological examination. We can recall difficulty in attempting to classify mild enteric infections which could not conscientiously be called typhoid. Most of us have had experience with many cases of fever in which the mode of onset and early symptoms seemed to justify a presumptive diagnosis of typhoid, only to have them end suddenly and discredit our diagnosis. Probably many of these were cases of paratyphoid.

Symptoms of paratyphoid are much milder than those of typhoid; the onset is much more abrupt, and the temperature may go to 104 the first day and gradually creep down to normal within a week or ten days, while in typhoid we are more apt to get the gradual step-ladder rise in temperature.

The average period of incubation is from five to fifteen days. Headache and general malaise are occasionally noted during this period. In waterborne outbreaks an afebrile diarrhea is a common symptom. There are the same lassitude, headache, shivering, loss of appetite, thirst, nausea and general muscular pain as in typhoid. Severe occipital headache and backache are frequent, and abdominal pain, colic and vomiting are apt to be more pronounced than in typhoid. Cramps in calves of legs are common and suggestive symptoms. Diarrhea and constipation occur in about equal frequency. Fever curves show great variation in type and may resemble the curves of continued or remittent malarial fevers.

The total duration of the febrile period is in general much shorter than in typhoid, usually being about two weeks. There is a characteristic rash which has been found in about 60% of cases of paratyphoid. As a rule the spots appear late in the febrile period, from the seventh to the nineteenth day; often not until the temperature has reached the normal level and for this reason may be overlooked. Distribution of the rash is usually upon the abdomen and lower chest. Writers describe two distinct types of the rash, which may occur independently or mingled in the same person. One type is identified in every way with the rose rash of typhoid; the paratyphoid type is larger, more often elevated, is lenticular in outline, much darker in color and does not completely disappear on pressure. When it fades it leaves a slight temporarily pigmented and desquamating area. This spot bears a close resemblance to the individual macule of the eruption of measles.

The paratyphoid and typhoid bacillus escape from infected individuals by the same routes. Transmission, also, of both infections is by the same channels with the single conspicuous difference that B. paratyphosus more frequently gains entry into the human organism through the medium of infected meat. Specific measures for prevention of typhoid by destruction of the bacillus at its source and by prevention of transmission from sick to well apply with equal force to prevention of paratyphoid infections. Transmission of paratyphoid organisms by food infections can be prevented by cleanliness in food distribution through the sterilization of all food supplies. The paratyphoid organism multiplies in infected meat which has been imperfectly cooked or in well-cooked meat which has been contaminated by unclean hands, cooking utensils or flies. Preserved and canned meats, mince meats and sausages are especially liable to act as such culture media and should be given special consideration.

The medical treatment of paratyphoid is identical with typhoid in all its details.

Dr. E. F. Butler of the Packer Hospital, Sayre, read a paper on "Acute Empyema," which was discussed by Dr. Hawk. Following is an abstract of the paper:

ACUTE EMPYEMA

The possibility of a chronic empyema resulting from an acute case is sufficient to warrant approaching this subject from the standpoint of prevention or obviation of chronicity. To reduce the possibility of chronicity the following points may well be emphasized: (1) Early recognition of the empyema. (2) Realization that pneumococcus or streptococcus empyemas are separate and distinct clinical entities. (3) Logical initial treatment. (4) Close personal daily attention to the patient after operative procedures have been instituted.

1. Following any pneumonia the following occurrences should put the physician on his guard: (a) Rise in temperature after the crisis, (b) unproductive cough, (c) disparity of motion on the two sides, (d) pain, (e) respiratory difficulty, (f) cyanosis.

The physical signs are: (a) Limitation of motion on the affected side, (b) absence of Litten's sign, (c) diminution or absence of vocal fremitus, (d) impairment of percussion note, (e) suppression or absence of breath sounds.

Although the physical signs should be the basis of diagnosis, x-ray evidence is of extreme value.

The final diagnostic step is aspiration and bacteriological examination of the fluid obtained.

2. Inasmuch as the clinical course and behaviour of empyema of streptococcic origin and empyema of pneumococcic origin are quite different, it is important to know definitely the bacteriological diagnosis. The logical treatment in the two conditions varies. (See "Acute empyema." Butler and Haverstock, Military Surgeon, April, 1921.)

3. Acute empyema is properly a surgical condition and is best handled under surgical environment. The choices of surgical procedure include: (a) Simple aspiration, (b) trocar cannula stab drainage, (c) intercostal thoracotomy, (d) thoracotomy with resection of rib.

No one procedure is all-sufficient in itself. Each case presents an individual problem best solved by judicious application of optimum procedure to meet the given condition. Often preliminary aspiration tides the patient over the critical period.

4. More important than the operative treatment is the daily dressing care. This can best be carried out by the trained surgeon, and on this really hinges to a great measure the prevention of chronicity.

C. L. Stevens, Reporter.

CHESTER—APRIL

The regular monthly meeting of the Chester County Medical Society was held at the Chester County Hospital on Tuesday, April 18, 1922. In the absence of President W. W. Betts, Dr. Thomas G. Aiken of Berwyn occupied the chair.

Following the regular order of business the society enjoyed a most interesting paper on "Meningitis" presented by Dr. Guy T. Holcombe of Oxford. Dr. Holcombe had had a remarkable opportunity for observing this condition in all of its forms while serving for fourteen months with the British Army in the late war, and had been closely associated with some of the leading epidemiologists and pathologists of England.

After a short discussion of the pathology, symptomatology and general diagnostic features of simple acute meningitis, Dr. Holcombe took up the main subject of his paper, namely, cerebrospinal fever which had been epidemic in the British forces during most of the period of the war. The carrier problem was probably the most important one in relation to the control of the epidemics. It was found that the carrier period, namely the period during which the infected individual did not actually develop the disease, was between three and four weeks. In taking cultures of suspected individuals the West swab, which was a glass tube containing a swab of cotton on a metal applicator, was universally used. This swab was of peculiar advantage in taking cultures from the nasopharynx because it could be introduced into the back of the nose without danger of contamination, then the cotton applicator swab could be pushed forward into the nasopharynx, and withdrawn into the glass tube before the tube was withdrawn from the nose.

Another interesting feature of the work was the typing of the organisms, which was carried out whenever practicable. It was found that the reason for failure of certain anti-meningococcic sera was due to the fact that, while they were polyvalent, they did not contain a proper proportion of immune bodies for the type of organism encountered in the individual. This was well illustrated in the case of an officer's wife who had become infected and had run a protracted course of the disease, with only moderate response to the enormous doses of serum administered. It was found that this patient was suffering from an organism of one of the rarer types, which was only slightly represented in the polyvalent serum which had been used. Upon the typing of the organism, and the administration of appropriate serum, the condition cleared up promptly.

Lieutenant-Colonel Gordon once made the statement that every case of cerebrospinal fever was an instance of the carrier developing the disease. For this reason it was essential to treat properly every case showing a positive culture. The men were isolated from the main body of soldiers, and given thorough disinfection of the nose and throat by 1% chloramin in steam, or 2% Di-chloramin-T in spray until three negative cultures were obtained. It was most interesting to note that there were no instances of cross-infection among the carriers, that is to say, if a man were a carrier of one type of organism he remained a carrier of that type only.

The most characteristic symptoms of the disease were: headache, vomiting, delirium, loss of memory, rigidity of the neck, dilated and often unequal pupils, slow pulse, and more often exaggerated reflexes Kernig's sign is of important diagnostic value, but does occur in other conditions. With the onset of intense headache, vomiting, stiff neck, and slow pulse with high fever, the indications are clear for a lumbar puncture, which should be done under a general anesthetic. The rule adopted was to note whether or not the fluid was clear. If turbid, the spinal fluid was allowed to run freely until the drops could be counted; then half as much serum as the spinal fluid extracted was allowed to run in by gravity. For curative purposes, four to six or even more doses of serum were required, given every six to twelve hours and continued until the temperature had been normal for two days.

A rather common complication following cerebrospinal fever was arthitis. A few cases of paralysis, usually temporary and involving few structures were encountered.

Dr. Harry A. Rothrock, of West Chester, opened the discussion, calling attention to the diagnostic value of the ophthalmoscope in cases of meningitis A blurring of the edges of the disc, with engorgement of the retinal veins is highly suggestive in the early stages of the disease. Lateral nystagmus is also a sign of some value. Other members of the society joined in the discussion, and in conclusion a hearty vote of commendation was extended to Dr. Holcombe

Henry Pleasants, Jr., Reporter.

DELAWARE—APRIL

The April meeting of the Delaware County Medical Society was held at Chester Hospital on the 13th, Dr. John B. Roxby presiding.

Dr. J. W. Kennedy, of the Joseph Price Hospital of Philadelphia, addressed the Society on the subject "Urgent Abdominal Conditions."

The first condition discussed by Dr. Kennedy was that of intestinal obstruction. The various causes of obstruction were reviewed, special emphasis being placed on hernia and adhesions. Strangulated hernia is a very common cause and its presence is often missed because of incomplete examinations. Proper exposure of the patient for examination is often neglected, simple though this fact may seem. Another point stressed by Dr. Kennedy is the fact that strangulated hernia is always a surgical condition and never should be treated medically. The diagnosis is usually easy, the presence of an irreducible mass in the common locations of herniae being sufficient.

In strangulated umbilical hernia another problem presents itself. Often these herniae are of long duration and are very large. The contained bowel and omentum are, in a certain sense, no longer residents of the abdomen, and their replacement is attended with great difficulty and often with disastrous results. For these reasons the treatment of strangulated umbilical herniae should be the prevention of the strangulation by early operation, before they attain a great size.

Postoperative adhesions is another prevalent source of intestinal obstruction. Dr. Kennedy believes that many of these adhesions are the result of the prevailing method of treating suppurative lesions in the peritoneal cavity. When these lesions are treated by thorough "toilet" of the peritoneal cavity by the Price method, adhesions are not often seen. In these cases of obstruction due to adhesions the history of previous operations is important.

Another urgent abdominal condition is that of ectopic pregnancy. The history of these cases should be studied with very great care and will materially aid in making a diagnosis. The facts usually elicited are that the woman is as a rule recently married or has had a long period of sterility, and that her previous menstrual period was absent, delayed or otherwise altered. She is usually attacked by a sudden, sharp, agonizing pain frequently with collapse, blanched face, deranged mentality, and other symptoms of shock. She may have a bloody vaginal discharge. On examination there is noted this condition of shock, a low central abdominal distension which is often quite marked; and on vaginal examination the cervix is very tender and one may palpate a mass to one side of the uterus. The carefully taken history of these cases, with the finding of a very tender cervix on examination will often enable one to diagnose ectopic pregnancy before rupture occurs. The treatment is always immediate operation, as one never knows the exact conditions in the abdomen.

Dr. Kennedy also discussed his well-known views relative to the treatment of suppurative peritonitis, and told his reasons for the thorough cleansing of the peritoneal cavity and the use of the coffer-dam drain.

Geo. B. Sickel, Reporter.

ERIE—APRIL-MAY

At the meeting held April 4th, Dr. E. I. Steinberg, dermatologist, of Erie, by means of carefully selected lantern slides demonstrated many interesting common as well as more or less rare skin lesions that one is liable to meet in general practice.

At the meeting held May 2nd, Dr. Halsy Beach Loder, of the Harvard Medical School, Boston, gave an illustrated lecture on osteomyelitis. Before the slides were exhibited he outlined the pathology of the disease as most commonly manifested and gave a few pointers on diagnosis and treatment. He pointed out that lesions of the bone were an exception to those of other tissues, in that final recovery was not accomplished spontaneously. This disease is most commonly seen in older children and young adults. It is a blood-borne infection and most commonly due to a staphylococcus invasion and is usually secondary to some other general infection such as measles, scarlet fever or even furunculosis. There are occasions where the only primary lesion found has been a very small pustule on some part of the body. The lesions are mainly confined to the shaft of the long bones near the epiphiseal junction. While it may involve the spongy part of the bone, it is not nearly as likely to as is tubercular infection.

The process starts in the marrow and spreads to the rest of the bone through the canals. It may thus spread in a very irregular manner. After a few days an exudate appears under the fibrous periosteum and if the resistance is good it raises the periosteum off the bone. It later breaks through into the soft parts and an abscess presents at the surface. If left to itself nature tries to establish a process of repair resembling what takes place in a boil, by the formation of a sequestrum of bone corresponding to the core of the boil. The whole shaft of the bone may become a foreign body and no healing can take place as long as it is there. Nature tries to get rid of it by absorption but it takes several years. The osteogenetic layer of the bone is pushed out and never destroyed in this disease and new bone formation begins from this layer and progresses towards the formation of a new shaft, leaving the old shaft enclosed. This process is often quite well developed in 3 or 4 months, and in a year the new shaft is as strong as the old, but full of irregularities. The old shaft having become separated, very slowly begins to be absorbed. On account of the fact that nature cannot fill a cavity with rigid walls, this old shaft should be removed while the shell still has the power of repair, usually at about six months. There is then a growth of the new shaft towards the center, and by absorption of the outside the bone becomes nearly of normal size.

The institution of proper treatment early, depends on an early diagnosis of the condition. There is usually acute pain at the onset, but after the tension has been relieved it is not so severe. The pain is referred to the end of the shaft. There is usually local tenderness and other evidences of inflammation. There is always swelling but often so little as to be detected only by the tape measure. In many cases pain on pressure is not elicited unless the pressure is maintained for a few seconds. This is a valuable point in diagnosis. It is often wrongly diagnosed as rheumatism, as some cases have an effusion into the joint. In rheumatism, however, the joint pain comes early, while in osteomyelitis the joint pain comes later and the greatest swelling is not in the joint.

In regard to the treatment, the indications are to limit the spread of the infection by drainage as soon as possible. When in doubt it is always safe to explore, as an infection is rarely carried into the marrow from the outside by such an exploration. If the bone is involved, more and more edema is encountered and the incision is deepened. If the periosteum pulls off easily, open the shaft by trephining over the suspected area. Care must be taken on removing the button to prevent the blood from staining the marrow and giving rise to false conclusions. If the infection is not found at the first opening, more openings should be made at short distances down the shaft. Later connect all the button holes. Unless the patient is very toxic one should not wipe out the canal, as necrosis of the whole shaft will follow. If the joint is affected, aspirate it before opening the shaft. If pus is found, wash it out, sew it up tightly and then open the bone. If the tibia or any bone which has a splint bone is involved, the necrotic shaft may be removed in two weeks. If a single bone like the femur is the seat of the lesion one should wait 16 weeks or until such time as the x-ray shows that the new bone is one-half the size of the shaft. When done early the walls may be partly crushed together and some of the cavity obliterated. In the treatment of chronic cavities, when not seen until late in the disease, curetting is not satisfactory because the power of bone repair is gone from the hard tissue which forms the base of the cavity. Such a cavity should be sterilized by some such means as the use of phenol, or filling with water which is made to boil by the use of the cautery, then cut out the hard ebonized bone until good new bone is found. The wound is then loosely sewn up and allowed to heal by blood clot while the surgeon gets down on his knees and hopes! These cavities are also closed sometimes by means of a plastic operation, utilizing the skin and soft parts of the neighborhood, but the method by the use of the blood clot is the one of choice. Before doing an operation of this kind one should be prepared for quite a good deal of postoperative shock.

A series of lantern slides were shown, illustrating the statements made in the forgoing remarks. The topic was then opened for discussion and questions, which brought to a conclusion a very interesting and instructive meeting. F. E. Ross, Reporter.

FAYETTE—APRIL

The regular meeting was held at Uniontown, April 6th, 1922. Following the usual business routine, Dr. C. M. Luman of Uniontown presented a very instructive paper upon the diagnosis and treatment of gastric and duodenal lesions.

Some of the points emphasized by Dr. Luman were:—

1. Given a case of stomach complaint, indigestion the patient often calls it, which does not readily respond to medication, do not delay further but use such means as will procure a positive diagnosis, and render treatment accordingly.

2. 95% of gastric lesions can be located and diagnosed by the x-ray; but the extent of metastasis cannot be shown by this means.

3. 40 to 50% of cancer cases give a previous history of ulcer.

4. All cases of gastric or duodenal ulcer which show obstruction or persistent bleeding should be relieved by operation.

5. Carmen of the Mayo Clinic makes the statement that any ulcer of the stomach over 2 cm. in diameter can be considered malignant.

6. Anacidity does not always mean cancer.

The paper was very thoroughly discussed by Drs. T. B. Echard, Connellsville; Edie, Connellsville; LaClair, Uniontown; Crow, Uniontown and VanGilder of Uniontown. The latter gave a very vivid description of his personal experience with a ruptured gastric ulcer.

Never having had any previous stomach complaint he was suddenly seized one morning while awaiting breakfast with a terrific pain in the epigastrium. He was unable to eat but managed to get himself together sufficiently to drive to the hospital. Here he collapsed at the entrance and was carried to a receiving room where some kind medical friend gave him some hospital whisky. Following this, he stated, the pain was greatly intensified, if such a thing could be possible. His condition not improving, he was operated upon and a small perforated gastric ulcer was found. A purse string suture was thrown around it and the lesion invaginated. Patient made an uneventful recovery and now, six months after the operation, weighs more than he ever did and is eating everything and feeling fine. George H. Hess, Reporter.

FOURTH CENSORIAL DISTRICT—APRIL

The meeting of the Fourth Censorial District, composed of Berks, Montgomery and Schuylkill County Medical Societies, was held at the Y. M. C. A., Reading, April 20th.

Dr. Winfield H. Ammarell, of Birdsboro, president of the Berks County Society, made the address of welcome, in which he said he was pleased to tell our visitors that we are fortunate in owning our own building, and that every member has paid his dues for 1922. He also said that we have the best of all the state medical journals, and that the editorials are the best part of the Journal, as they give us information on medical legislation.

Dr. Arthur B. Fleming, of Tamaqua, secretary of Schuylkill County Society, said that since we have better roads the outlook for our Society is better than formerly, when the bad roads interfered with the social and fraternal meetings, as the members are scattered through 25 boroughs or towns.

Dr. J. A. Lessig, of Schuylkill Haven, censor of Schuylkill County Society, said: "Three months ago I was appointed district censor, since which time I have tried to encourage the members to manifest more energy and enthusiasm. It devolves upon each one of us to support our county society. If we do not we will have a serious problem to solve. If the members of the medical societies are a unit in opposing adverse legislation our influence will be felt and the profession can be elevated."

Dr. Geo. W. Miller, of Norristown, president of Montgomery County Society said: "I am present with eighteen stalwart, honest, sober members of our Society, which fact speaks louder than words."

Dr. William McKenzie, of Conshohocken, censor of Montgomery County Society, reported the visit of a narcotic inspector, and expressed his resentment towards the restriction of the use of narcotic drugs.

Dr. J. E. Livingood, of Reading, secretary of Berks County Society, expressed himself as gratified to see such a good attendance, and urged all to resolve to accomplish something for their society.

The Secretary of Montgomery County Society brought greetings, and said that while they have no home, they have $3000.00 toward one, are incorporated, and have 155 members, of whom all but three have paid their dues.

Dr. Ira G. Shoemaker, of Reading, Councilor of the Third Councilor District, said that it would take too long to tell all that the State Society has done or wants to do. He said that before he attended these meetings he was not aware of how much depended upon the individual members, as well as upon the component county societies of the state. Without the support and coöperation of the members the State Society cannot attain success. Formerly the State Society had no recognition outside of medical circles; to-day it is a power in the state.

He said further that too much praise cannot be given the Medical Legislative Conference in averting undesirable legislation. The Conference prevented passage of the most vicious legislation of the Chiropractic Bill. Each society has made its contribution toward our success.

We have been charged by the public with insincerity, have been accused of shrouding ourselves with a cloak of mysticism. Dr. Shoemaker suggested an active Publicity Committee in each county, saying that he believes medical men should enter politics. We, as a body of men must be reckoned with. We have been charged with antagonizing any cult differing with us. Cults always have existed and always will exist, but we demand that they meet the same educational requirements as the physician. Plumbers must serve an apprenticeship and must pass a master plumber's examination, while people can be imposed upon with any kind of treatment—including powwowing. The medical profession is not opposed to cults, but we demand that like us, they meet certain educational requirements.

Col. Duffy, of the State Department of Health, said that Dr. Martin, our Commissioner of Health, is interested in health problems and does not allow politics nor politicians to interfere with the work of the Department. It is up to the members of the medical profession to look after the profession.

Dr. Frederick L. Van Sickle, Executive Secretary of the State Society, outlined the legislative problems which affected organized medicine in the legislature of 1921, and urged the need of active coöperation in a political way to secure the election of representatives to the legislature who will understand the need to consider carefully subjects affecting the people's health. Dr. Van Sickle stated that preliminary and premedical education was the basis of any legislation which should be enacted regulating examination and licensure for the practice of the healing art.

Senator James Norton told the Society that he is heartily in sympathy with the medical profession, who are subject to many attacks from their foes. He said that physicians must, in a sense, be selfish in order to protect the public. The public must be protected, and it is noticeable that in cases of fatal illness they always appeal to the doctor, when other cults have failed. He believes that if physicians coöperate they will succeed.

Clara S. Keiser, M.D.,
Reporter for Berks County Society.

INDIANA—APRIL

The regular monthly meeting of the Indiana County Medical Society was held in the Elk Rooms on April 13. The members present were: Drs. Dodson, Coe, Rink, Moore, Coolidge, Reed, Raymond, F. W. St. Clair, Shields, G. E. Simpson and Torrence. President A. H. Stewart being out of town, 1st Vice-president C. Paul Reed had charge of the meeting.

Dr. Leroy Coolidge of Clymer presented a very interesting paper, his subject being: "Obstetrics in General Practice." The paper covered all the major points of the subject very fully. He spoke at some length on the use and abuse of pituitrin and laid special stress upon the indications for version. The discussion was opened by Dr. Dodson, who was followed by most all members present. There being no further business the meeting adjourned.

James M. Torrence, Reporter.

MERCER—APRIL

The Mercer County Medical Society met at the Sharon Country Club, at Sharon, on Thursday P. M., April 13th, with 47 present. Luncheon was served at one o'clock, after which we adjourned to the living room. President Reed introduced Dr. Walter F. Donaldson, of Pittsburgh, Secretary of the Medical Society of the State of Pennsylvania, and President of the Allegheny County Medical Society. Dr. Donaldson made a very able address on Medical Legislation. We are always glad and honored to have Dr Donaldson with us. Mr. J. C. Funk, of Harrisburg, special attorney for the G. U. Division of the State Department of Health, gave us an excellent talk on his line of work. We had with us the following candidates: F. P. Miller, of Meadville, and H. K. Daugherty, of Grove City, candidates for the State Senate; A. E. Allum, of Sharon, who has been in the Legislature for two terms and has supported medical legislation; W. D. Sample, of Sharon, and M. C. Miller, of Greenville, candidates for the Legislature. After Dr. Donaldson's very convincing address, each candidate pledged his support for medical legislation and public health measures. A short business meeting followed. Miss Margaret Cumming, Superintendent of Buhl Hospital, Sharon, and four M.D.'s from Youngstown, Ohio, were guests. Adjourned to meet in July.

Edith MacBride, M.D., Secy.

MONTGOMERY—APRIL-MAY

The regular meeting was held at Montgomery Hospital, Norristown, April 5, 1922. The following members were present: Drs. Anders, G Miller, Simpson, Wolfe, Drake, Garner, Harris, Atkinson, Roberts, Parker, Lukens, Dill, Bostock, Sherborn, Shearer, Corson, G. Lukens, Knipe, McCracken, E. A. Krausen, F. Krausen, Ramsay, Sheehan, Moore, Hunsberger, Gotwals, Yeakle, Wright, Hubley, Beideman, Fabbri, Irwin, Seiple, Hartman, Heffner, W. G. Miller, McKenzie, Elmer and Harris.

The following applicants, having been favorably acted upon by the Board of Censors, were elected to membership: D. B. Boyer, Hatfield; A. J. Craig, Fort Washington; Joseph M. Ellenberger, Norristown.

Dr. Ira G. Shoemaker, councilor, was present and spoke upon legislative matters, while Dr. Anthony Myers, Secretary of Bucks County Medical Society, spoke upon the recent prosecution of chiropractors and osteopaths in Bucks County.

Dr. R. Tait McKenzie, of the University of Pennsylvania, was the guest of the society and spoke upon "Facial Expressions, with Special Reference to the Relation of the Physiognomy to Exercise." This was an excellent address illustrated by slides and masks which he had made. After the meeting an excellent luncheon was served by the nurses.

April 20, 1922, nineteen members of the Montgomery County Medical Society attended the meeting of the censorial district, composed of Montgomery, Berks and Schuylkill County Societies at the Y. M. C. A., at Reading, where we heard speeches from the presidents and secretaries of the various societies and some well chosen remarks from Dr. I. J. Shoemaker, councilor of the district, and Dr. Van Sickle Executive Secretary of the State Society. The talks followed an excellent dinner.

The May meeting was held at the Pottstown Hospital

Wright, Hubley, Hartman, Fabbri, McLaughlin, Reed, on the 3rd, with the following members present: Drs. G. W. Miller, Bostock, McCracken, Doran, Eisenberg, Heffner, Little, Yeakle, Sherborn, Corson, Bushong, VanBuskirk, Hunsberger, R. Knipe, W. H. Knipe, Wolfe, Anders, Gotwals, Dill, Hanley, Buyers and Simpson.

Dr. John T. MacDonald, a member of the Columbia County Medical Society, presented a transfer card duly endorsed by Luther B. Kline, secretary, and on motion was duly elected a member of this society.

Dr. Herbert Bostock of the Public Policy and Legislation Committee announced that he had collected $53.00 from 43 members for the Medical Legislative Conference.

Dr. L. E. Evens of Philadelphia spoke upon "Industrial Medicine and the Relation of the Medical Profession to the Insurance Organization." He asked for greater coöperation between the old line insurance company and the doctor, stating that the vast proportion of insurance business depended upon the medical profession.

Discussion was opened by Dr. Henry D. Reed, followed by Drs. Fabbri, R. Knipe, Hubley, Buyers, Miller, Hunsberger, Wolfe and was closed by Dr. Evens.

John C. Simpson, M.D., Reporter.

NORTHAMPTON—MARCH

The Regular Monthly Meeting of the Northampton County Medical Society was held on March 17th at Seips Café, Easton, with the president, Doctor Delbert K. Santee in the chair.

A communication from the State Department of Health on the subject, "Diphtheria Can be Controlled," was on motion not read as all members had received a copy of same.

A communication from Chairman Knowles of the Legislative Medical Conference was received, acknowledging the receipt of one hundred and eighty-two dollars and conveying thanks to the society in behalf of the committee for the "very generous support and hearty coöperation in this work."

Doctors Stotz and Lentz were the new members elected.

Doctor Frederick A. Sherrer of Easton was introduced by the president. He gave an interesting talk on "Radium and Radio Activity." The subject was admirably covered from its historical beginning until its present phase. Dr. Sherrer's paper was followed by Dr. Quiney of Easton who read a paper on the subject of the "Preparation of Patients for X-Ray Examination." He digressed from the subject to x-ray diagnosis and interpretations, covering the subject very well and to an appreciative audience.

Dr. H. F. Leibert, of Bethlehem, discussed the paper of Dr. Quiney. He emphasized several points, complimenting the Doctor on the thoroughness of his paper, etc.

The president next introduced the district censor, Doctor H. W. Albertson of Scranton. He spoke at length on the subject of the policies of the State Medical Society, the need for changes to meet new and existing conditions and for the general good of the general practitioner. He complimented the society on the scientific program of the meeting and the spirited manner in which the proceedings were conducted. On motion, a rising vote of thanks was extended to Doctors Albertson, Sherrer and Quiney on their valuable contribution to the society.

The death was officially announced of Dr. John Mazza of Bangor. The president appointed Doctors David H. Keller and Dilliard of Bangor and Beck of Portland to present appropriate resolutions for adoption at our next meeting.

The Bulletin committee reported as follows: "After investigating the matter of bulletins issued by county medical societies and seeing various publications, we feel that our society could not be benefited by issuing such a publication.

"We recommend that the regular monthly program contain the following additional material: Matter pertinent to a medical society, such as city health ordinances, new state laws, pending medical legislation and the progress of the same, notice of prevalent epidemic diseases in centers of dissemination, notices of meetings or lectures (in available localities) that are of interest to medical men and possible reviews of certain medical books." On motion the recommendations were adopted by the society.

Announcement was made of the meeting of the College of Surgeons for Pennsylvania, New Jersey and Delaware to be held at Allentown the 3rd and 4th of April. Invitations were extended to the members to be present at the various clinics. Dr. Estes, Sr., enlightened the members on the purposes to be accomplished and expressed the wish that all would avail themselves of the invitation.

After luncheon was served the meeting adjourned.

W. A. Finady, Reporter.

PHILADELPHIA

FEBRUARY 8TH

The president, Dr. J. Norman Henry, in the chair.

The Diagnosis and Treatment of Mental Diseases by the General Practitioner: This paper was read by Dr. F. X. Dercum, who said that the position of the general practitioner is peculiar and trying, in that he is the first to see the disease, and in that the disease has such manifold forms. It is on his general and detailed knowledge that the future of the case depends. If he has not detailed information and is unable to see facts, he must be careful that fads do not engulf him in their absurdities.

It is the attitude of mind of the general practitioner to find the cause of the symptoms in visceral disturbance, but in 20-25% this attitude closely adhered to leads to error. Mental disease in its early stages may closely resemble visceral disease, but again, a functional disorder may be the beginning of mental disorder. All medical and surgical measures in these cases are of no avail. Neurasthenia, psychasthenia, hypochondria, all have their origin primarily in the central nervous system, nor have dementia præcox and mania depressive insanity any relation to visceral disease or infection. Neurotics and insane are characterized by inferiority, morphological arrests and deviations, irregularities of the glands of internal secretion, or some abnormality of function. They break down under the strain of living, and the visceral peculiarities are but a part of the general inferiority.

Dr. Dercum next called attention to another group—that of tabes and paresis, the beginning of which may suggest either nervous disorder or visceral disease, and spoke of the frequency with which a mistake in diagnosis had led to surgical treatment.

The patient should be studied as a whole, and the importance of visceral lesions should not be overestimated. Teeth and tonsils should not be needlessly sacrificed, nor should the patient be subjected to a great number of expensive laboratory tests, for after a long series of negative reports his confidence wavers. Special examinations should be made only when specially indicated. The physician should depend upon the clinical diagnosis, which is not difficult. Neurasthenia can clinically be differentiated from visceral disease; hysteria is largely heredity, clearly mental in origin; psychasthenia shows nervous exhaustion, fear, anomalies of the will, chronic indecision; hypochondria presents an all-convincing sense of illness. The every-day laboratory examinations are the only ones usually indicated.

The fact that the patient is brought to your office is always suggestive of mental disease. The relative states that the patient has been nervous for some time past; that he has not been able to keep up in his work, has been disturbed, excited, hallucinated. The answers of the patient may be slow, confused, elusive, or may show persecutory ideas. The neurological examination may be negative except for a duskiness of the extremities. When the symptoms are only slight the possibility of dementia præcox must be borne in mind. In an adult, loss of efficiency, vagaries of conduct, etc., suggest paresis, and an examination of the blood and spinal fluid should be made. In all cases test for gait, reflexes, and note in the pupils gross anomalies, inequalities and irregularities. Typical Argyll-Robertson pupils usually come late. The pupils in paresis are ovoid or irregular, or slightly angled. The deformities are never gross but always distinct. The shape may change while under observation (ameboid pupil). The laboratory findings only confirm, if negative they do not change the diagnosis.

In melancholia the danger of suicide must be borne in mind. Mania must be differentiated from delirium. In the latter there is mental confusion; the patient is restless, the mind is obscured, the speech is fragmentary, unrelated, unsystematic, no rational replies are given to questions. In mania, on the other hand, there are no hallucinations, the patient is lucid, expansive, aggressive, and the speech comes in rapid flow, boastful and declamatory.

In the paranoid states it is well not to be hasty, to consider first the actual existence of insanity, and second, the advisability of commitment. Dementia præcox and melancholia need upbuilding, and can sometimes be cared for at home. Paresis in its beginning calls for intensive specific treatment.

The general practitioner must make the diagnosis of incipient mental disease. He must make the effort to raise the patient to as high a physiological level as possible. The ideal treatment is to place the patient in bed and by rest remove the strain on the neuromuscular apparatus and lessen the demand on the endocrine glands; to give full feeding as in cases of tuberculosis; to promote elimination and to keep the skin healthy by massage and bathing. Simple methods bring brilliant results, and the general practitioner who sees the cases in their incipiency, has a very grave responsibility.

Insanity as a Physical Disease: Dr. Charles W. Burr began this paper by saying that nothing so well illustrates how little man has changed in his opinion concerning the essentials of life as the popular opinion of insanity and what it is. The populace still views insanity as queer, uncanny, and do not think of it as a physical thing. It is up to the doctors to spread the idea that insanity is a disease, just as are typhoid and pneumonia. The Freudian mystics to-day are doing all they can to uphold the idea of the uncanniness of insanity. They teach that man is himself only when asleep, that when he is awake he is controlled by a "Censor," and so cannot do what he will. In dreams he lives the life he wants to live, and these dreams express themselves in a mysticism and symbolism queer and weird. The psycho-analyst goes on to explain that certain types of insanity are the striving after an unconscious, unfulfilled wish, that the delusions of paresis are due to this striving after happiness, and not to the spirochete. There is a type of mysticism growing which does not lend itself to scientific proof.

It is the general practitioner who must teach the people, not the specialists. It is his duty to teach a sane psychology of life. It would be well if the words "insane," "lunacy" and "asylum" could be abolished, for they have gained new connotations and ideas, and the original meaning has been lost.

Upon the actual question of what physical things produce insanity we are very ignorant. Dr. Burr would group mental diseases into two divisions: first, the *accidental,* or those in which heredity plays the smallest part, and where the accident of environment or infection plays a big rôle, as in the case of senile or arteriosclerotic dementia and paresis; second, those in which *heredity* plays a big part, where the individual is doomed from conception. In this class he puts paranoia, dementia præcox and mania depressive insanity. They are diseases of the whole personality. The problem now is to find a physical basis for personality. The hypothesis most attractive to Dr. Burr is that of the theory of the endocrine glands. That they somehow or other affect our personality is undoubtedly true. Hyperthyroidism differs mentally and emotionally from hypothyroidism; the bright-eyed, thin-skinned, quick-witted, happy or depressed genius or genius-imbecile is very different from the fat, emotionless, sexless, ambitionless person incapable of powerful muscular effort. However, when the men of the endocrine school tell us that the mind is not in the brain, but in the endocrines and sympathetic nervous system, he finds this hard to believe. He still thinks that the brain is the organ of the mind. But in facing this problem we must search throughout the whole body for the cause of insanity, not in one anatomical part only. It will take patience and perseverance, and if the physician who sees the early stages of mental disease, will make a more thorough examination, studying the patients with care, he can do as much in solving the riddles of mental disease as the man in the laboratory.

The Relation of a General Practitioner to Mental Disorders (by invitation): Dr. Samuel W. Hamilton began his paper by saying that there are two handicaps in handling mental diseases, first, the lack of time for the required long sittings; second, the lack of instruction in the medical schools. Due to this lack of education, which makes mental diseases obscure, medical men do not have sufficient interest in these disorders.

Mental disease has a perturbing effect upon the household, the patients need detailed care, but in many cases this care may be successfully given in the home. The task is greatly lightened if an attendant may be secured for night. The delirious should never be left alone.

General paresis constitutes about one-fourth of the male admissions to institutions for the insane—19% of the males, 8 to 12% of the females. It may simulate any other disorder of the brain, but the diagnosis is made clear by the physical findings. Many never go to the hospital. A middle-aged man, losing his ethical sense, acting queerly, and showing pupillary changes, should be prevented from disgracing his family and scattering his property. While hospital treatment in these cases may not be necessary it is usually advisable. Many quiet down in an institution and may go home with a degree of medical supervision.

Acute mental excitement leads to wild extravagances of conduct, but may end in recovery. These cases should have the best nursing, as neglect may be fraught with grave consequences to the patient. They must be observed constantly.

Dementia præcox constitutes a large but not coherent group. These cases show a loss of normal interest, with substitution of an imaginary world. While these may go without institutional care, better results have been obtained in the hospital than at home, where there is no formulation of definite treatment.

In the depressions the seriousness is frequently not recognized by the relatives or physician. The danger of suicide is not realized. Every depressed case is potentially suicidal.

In sending a patient to the hospital warn the family against deception or falsehood. For commitment, papers, obtainable from City Hall, must be individually made out by two physicians, each of whom has been practicing at least five years, the certificate to be made out within one week of the examination and within two weeks of admission to the hospital. The physician must go before a magistrate to sign the document and to secure his signature. If there are no relatives the case becomes the charge of the police, the district physician giving the order for the patrol to remove the patient.

Persuade the family to follow the advice of the physician at the institution, assuring them that he can be trusted to do the best for the patient's welfare.

Discussion: Dr. Edw. A. Strecker said that a wide gap still exists between the problem of the psychiatrist and the experience of the daily physician. Dr. Strecker, too, agrees that too often "lunacy" is given the wrong connotation. The general physician is often an excellent psychiatrist, and the every-day creed of the old family doctor is the same as that of the psychiatrist. The minor psychoses are constantly being met and dealt with by physicians and surgeons. The symptoms of disease which cannot be measured by the usual methods of inspection, palpation, percussion and ausculation, representing the reaction of the whole organism to the infecting bacillus, must be studied. The language of psychiatry has been an obstacle confusing and formidable, and another hindrance has been the emphasis placed on one particular aspect by one school.

The psychiatrist has the case for diagnosis, but the general physician, specialists and laboratory experts all must contribute. Confusing points are less common than is often supposed. Insanity is only a disease and deserves the same attention as the other diseases whose etiology is still in doubt. In every ill person his reaction is the unknown quantity, and this is what psychiatry will make it possible to understand. Prophylaxis and preventive medicine are now the cry, and that human beings have a mind as well as a body must be realized. Psychiatry is devoted to the early diagnosis, cure and prevention of disease.

Dr. Dercum, continuing the discussion, emphasized that insanity is symptomatic of physical disease. The mind is a manifestation of neurone activity. Mental changes are influenced by food, alcohol, caffein, chemical impressions, and by the proteins of neurones themselves. So the toxins of fevers influence the neurone synapses and give rise to such disordered states as delirium. Other cases have a purely biological basis: the embryo never has evolved to the normal level. Certain structures develop and play a part in the chemical action of the body. When these fail to develop metabolism is incomplete, and as anomalies occur in other parts of the body so they occur in the brain. In the epileptic group there have been demonstrated abnormal fissurations and faulty development, resembling morphologically the brain of anthropoid apes. As of the gross, so also may occur anomalies of the neurones. Then why not an abnormal mental reaction caused by toxins? Insanity has a morphological, physical basis. Dr. Dercum has fought the fad of psycho-analysis. What have the psycho-analysts done? It has long been recognized that man likes to forget unpleasant occurrences: the normal man shakes off unpleasant impressions. It is only in the psychopathic, psychasthenic persons that these repressions find foothold. Sexual delusions form a very small part, considering the mass of others. Every practitioner has practiced mental analysis. All there is to psycho-analysis is so much unreadable (and should be unprintable) stuff.

In closing, Dr. Hamilton said that we should not get too discouraging a view of these persons who have been unable to withstand stress. Something can be done for them. Special measures should be taken to get the patient interested, and this can best be done for chronic cases in an institution.

MARCH 8TH

SYMPOSIUM ON TUBERCULOSIS

Nutrition of Children as a Factor in the Prevention of Tuberculosis (by invitation): In this paper Dr. Robert Schless outlined the work done by the nutrition classes, as organized by the Philadelphia Health Council. Every undernourished child is considered as a tuberculosis possibility. The classes are made up of children more than 7% underweight, twenty-five in a class. These children and their parents meet with the doctor, who tells them why they need building up and forces a showdown as to what they will do.

A careful physical examination by an experienced physician in the presence of the child's parents is essential, an effort then being made to have defects corrected, either through the private physician, if there is one, or in cases where they are financially unable to have a private doctor, through the free hospital clinics. A chart showing the weight and weekly progress as compared with the normal weight line, is kept for each child, and a system of red, blue and gold stars helps to maintain the spirit of effort and competition. Careful supervision of the diet is made, with demonstration of plaster models to show the caloric value of different foodstuffs.

In cases of corrected defects, the deficiency in weight is frequently made up in a little over a month. Early tuberculosis is discovered, and sanatorium treatment thus can be begun early.

There are now 1,091 children enrolled in these classes, and of all the children graduated one year ago, none had receded after a period of eight months. The average gain in weight has been 2 lb., 5 oz. per month, as compared with the normal monthly gain of 6 to 10 oz.

Tuberculosis of Animals (by invitation): Dr. T. B. Rogers (D.V.S.) began by saying that there is need for the medical man and the veterinarian each to know something of the other's profession. To emphasize this he quoted figures that show that 64% of the herds of the United States are infected with bovine tuberculosis, and 10 to 12% of skin, bone and glandular tuberculosis is due to the bovine bacillus.

The cow is especially subject to tuberculosis in that there is great pressure on the diaphragm, and it is doubtful if a full tidal respiration ever is possible. The cow rarely dies from uncomplicated tuberculosis, and may show no symptoms whatever until it becomes a mixed infection, when the animal succumbs very quickly. Before the introduction of the tuberculin test, therefore, diagnosis was very difficult. There are at present three tests used: first, the subcutaneous; second, the ophthalmic, either the simple installation of tuberculin into the inner canthus, or injection into the conjunctiva; third, the intradermal. The subcutaneous test is the most reliable, and in this the temperature must be taken hourly for 28 hours, in order not to miss the early and late reactions.

The contamination of the milk is usually through the feces. The presence of tubercle bacilli in the feces can be shown by letting hogs follow cows at pasture; if the cows are infected the hogs will become tuberculous.

There has been much antagonism to efforts at control of this disease, the farmers will give no direct or indirect help. Publicity and public sentiment are at present our best methods of control; legislation is impossible. The state boards of health should have at least concurrent jurisdiction with the sanitary boards in the control of all animal diseases communicable to man.

Tuberculin in the Diagnosis and Treatment of Tuberculosis: This paper was read by Dr. John A. Kolmer, who began by saying that there are few subjects in medicine as puzzling as tuberculin. The nature of the reaction is baffling. It can be given to the nontuberculous with impunity, and in infants, 1 c.c. given over long periods of time has no effect, yet for the tuberculous it is a virulent poison. The evidence points to the fact that the toxic substances arise from tuberculous foci, following allergic local shock. An allergic antibody is produced which is cellular, not free in the blood. The allergin produced in the tuberculous foci results in a degree of sensitization of the surrounding cells, including the skin, and these cells produce antibodies which unite with the tuberculin to cause allergic shock. Hyperemia, serous and cellular exudation occur around the tuberculous foci. After fibrosis and cure there is decreased sensitization. Strong reactions always suggest the presence of tubercles, and therefore, by its specificity, the reaction is diagnostic.

As to the prophylactic value of tuberculin little can be said. Tuberculin residue and bacterial emulsion may confer a slight amount of immunity.

Tuberculin has a distinct curative value especially in cases of chronic or well localized character, for fibrosis is hastened by the hyperemia produced by a series of tuberculin injections. The doses must be small and so spaced that the reaction is slight.

Recent Needs, Accomplishments and Plans in the State Work in Tuberculosis: Dr. A. P. Francine read this paper and in it he said that the program for the care of the tuberculous sick was twofold: first, to furnish a sufficient number of dispensaries and nurses by which to reach and educate the public; and second, to build sanatoria enough for the treatment and strengthening of suspected children. This is not beyond the hope of attainment, but it will take the combined efforts of the state and community. In Pennsylvania, instead of the old plan of over-centralization, a plan has been adopted whereby the state will pay the physicians and nurses and furnish medical supplies, and the community pays the rent for the quarters. Clinics have been established both as parts of local welfare units and in hospitals. After one and a half years there remains only one clinic where the overhead charges are not locally maintained, and no clinics have been closed. In Philadelphia, clinics have been opened in the Phipps Institute, Medico-Chirurgical Hospital, St. Mary's and Northeastern Hospitals and the Hospital of the Woman's Medical College of Pennsylvania. Clinics are soon to be opened at the St. Agnes, Jewish, Germantown and Abington Hospitals.

Increased clinic service means increased education, an increasing reaching out for new cases, and an increased number of sanatoria. There are long waiting lists for the 2,000 beds in the three state sanatoria for early and curable cases and for children. The state has issued long-time bonds and an annual tax for the maintenance of local sanatoria. Seven counties voted for sanatoria last November. Philadelphia and Allegheny Counties are very backward in providing hospital care for the indigent sick. It has been estimated that about 90,000 cases in Pennsylvania need care, and of these 50,000 cannot afford private treatment.

In discussion of the papers the following points were brought up: No permanent results can be hoped for from the nutrition clinics without an added effort toward better housing. More attention should be paid to dairy hygiene and tuberculosis in cattle. The subcutaneous tuberculin test in cattle is nearly 100% reliable. False results may be obtained if Koch's O. T. is injected 48 hours before the test, if a large dose of the coal tar antipyretics has first been given, if the animal has been filled with cold water, or by fake methods of injection. In the determination of the proper dose of tuberculin in treatment, skin injections of O. T. in five dilutions are made, the treatment being begun with that amount which just fails to produce a reaction. When tolerance is established to O. T., B. E. is given after tests as for O. T. A plea was made for a greater interest in public health.

MARCH 22ND

SYMPOSIUM ON APPENDICITIS

The Appendix in Intestinal Stasis: Dr. Geo. P. Muller.—Dr. Muller began his paper by saying that there are many cases of intestinal stasis in which the removal of the appendix helps. Frequently there is in the appendix stricture, obliteration of the lumen, disappearance of the crypts and lessening of the submucosa, and a diseased organ is easily recognized. Chronic appendicitis exists, but operation does not always bring complete relief. The literature on intestinal stasis and ptosis is abundant and modern work on the etiology would show the following to be causative factors: formation and rotation of the intestinal tube; disturbances in peristalsis and the congenital tonsils. In 25% of his cases x-ray examinations were nature of the body form associated with visceroptosis. In the fourth month of fetel life there occurs rotation of the large bowel, with descent of the cecum. Varying degrees of fixation and fusion of the colon to the abdominal wall occur. Later the omentum recedes into the hepatic flexure. This, however, instead of being withdrawn, may persist. Variations in the normal folds of membranes may occur, or the appendix may be hyperfixed and vary in its relations. It may become attached to the posterior mesentery and become so blended with the membrane as to cause a kink of the ileum. Inflammation of the appendix from its contents or obstruction may take place without other cause.

The membranes may be developmental, inflammatory, or simply anatomical variations. Inflammatory adhesions at the appendix may be superimposed on these. Stasis and loss of tone occur because of these bands.

Gaskill and Langley in studies of the effects on the gastro-intestinal tract of the autonomic nervous system find that the vagus controls down to the pelvic visceral nerve, and that an irritated appendix may produce inhibition of the sympathetic nerves in the intestine and may result in a block higher up at the pylorus. There are five segments of the autonomic system and disturbance in one results in disturbance in all. Alvarez finds that a rise of tone at the upper end of the alimentary tube hurries aboral progress, at the lower end slows it, and at the middle causes a flow both ways. The appendix disturbs the tone of the lower ileum, but due to the effect of the pelvic nerve no diarrhea occurs. A retrocecal, buried or filliform appendix may be a factor in closing the ileocecal valve or in causing stasis of the cecum. Bands may result in inflammation of the appendix, and their removal aids recovery. Other bands above, however, may make surgery of no avail. The surgical treatment of intestinal stasis is of little value, nonoperative means may better correct the difficulty. The treatment in these cases must be judged by a careful history, physical examination and x-ray study. Preventive measures will prevent surgery.

End Results after Operation in Chronic Appendicitis: Dr. John B. Deaver and Dr. I. S. Rabdin.—Dr. Rabdin read this paper, which was written after a statistical study of 500 cases operated upon at the University Hospital, 1913-1920. Ninety-four cases showed a relation between chronic appendicitis and disease of the upper abdomen, there being found seventy-six cases of gall bladder disease and eighteen cases of duodenal ulcer. The disease shows a definite increase in both male and female after the first decade, the highest number of cases occurring in males in the third, in females in the second decade. The symptoms shown are periodic pain in the right iliac fossa, tenderness in that region, dull, cramping or burning pain in the right iliac fossa, epigastric pain, pain in the right upper quadrant, pain after meals, pain relieved by vomiting, constipation and hematemesis. Nausea, vomiting and belching are frequent, and hematemesis often occurs without an upper abdominal lesion. History of attacks of abdominal pain was given by 418 of the 500 cases, and in 145 there was a history of chronicity with acute exacerbations.

At operation there were found adhesions, retrocecal appendices, fecal concretions and tubo-ovarian pathology. Among the pathological reports were chronic catarrhal, chronic interstitial, chronic obliterative, chronic ulcerative, chronic periappendicular, chronic tuberculosis appendicitis, carcinoma, mucocele and normal appendix.

In chronic appendicitis there are three types: 1, healed inflammatory lesion with previous acute or subacute attack; 2, chronic inflammation with no beginning acute or subacute attack; 3, either of the preceding, plus an acute exacerbation. No definite pathological findings can be correlated with the clinical symptoms. In 355 cases operated upon in the quiescent period there was only one death, and that due to an obstruction higher up; of 145 cases operated upon during an acute exacerbation there occurred 11 perforations and 4 deaths. In the cases of coincident upper abdominal disease the age incidence is higher, and the part played by the appendix in these cases is not known.

Two hundred and twenty-six replies were received to a follow-up, made either by letter or by personal interview. The average length of incapacitation following operation was found to be 5.73 weeks. In 188 the symptoms were entirely relieved, in 22 partially relieved, and in 16 the condition was unimproved or worse. Among the symptoms that persisted were found constipation, gynecological conditions, pain in scar, diarrhea, soreness in right iliac fossa, indigestion and backache. Subsequent operatons were performed in some cases for the following: gall stones, floating kidney, duodenal ulcer, adhesions and gastric neurosis.

The X-Ray Evidence of Chronic Appendicitis: Dr. Henry K. Pancoast.—Dr. Pancoast began his paper by saying that there has been little change in the views on this subject in the last ten years. He said that the value of the x-ray in these cases is fivefold: 1, to discover congenital anomalies, such as left-sided appendix or failure of the cecum to rotate; 2, observation of the visualized appendix; 3, to discover abnormalities in the appearance of neighboring structures, indicating a diseased appendix; 4, to show up other conditions that may be accountable for the symptoms; 5, to demonstrate other conditions accompanying the chronic appendicitis, which require further surgical exploration, or to establish the absence of such conditions.

Visualization of the appendix is possible in about 50% of the cases, depending largely upon the patency of the lumen to the barium or bismuth meal. If the appendix remains filled after the cecum is emptied, the poor drainage indicates an appendix that is potentially diseased. The diagnosis of disease is based on whether or not the appendix is adherent, kinked, irregularly filled; upon the emptying time, and the relation of the appendix to the site of pain on pressure.

There are three conditions to be excluded in making a diagnosis of chronic appendicitis: gall bladder disease, gastric and duodenal ulcer and urinary calculi, and in doing so the x-ray is frequently called for.

Dr. Pancoast closed his paper with a lantern slide demonstration of x-rays made upon suspected cases of chronic appendicitis.

Dr. George Morris Piersol opened the discussion by presenting findings from a study of fifty cases of chronic appendicitis, so diagnosed. He said that his statistics corresponded with those of the hospital, as to incidence. He cited the frequency with which colonic stasis, ptosis and other abdominal conditions exist along with chronic appendicitis, especially in women. Thirty-three and one-third per cent of his cases gave a previous history of typhoid, colitis or dysentery. Twenty-five per cent gave a history of infection of the made, and in 50% of these there was reported evidence of chronic appendicitis, usually associated with stasis, gastroptosis, pylorospasm and inflammation about the cecum. Three-fifths of the patients came for gastric symptoms, one-fifth complained of persistent nausea. Pain, tenderness (the most conspicuous feature), and rigidity were the main signs and symptoms. In three-fifths of the cases the leukocytes ranged from 7,000 to 10,000. Gastric tests showed hyperacidity in two-thirds, and pylorospasm and retention in a number of instances. Constipation was the rule, one-fifth showing alternating diarrhea and constipation.

As to end results—one-fourth of the patients were operated upon, with a result that 60% were definitely cured (these had little else wrong except with the appendix); 40% continued to have gastric symptoms and other complaints. In one-fourth of the cases satisfactory results were obtained from hygienic measures. In one-half of the cases end results were not obtained.

There still remains a problem as to the advice to give the patient with chronic appendicitis.

Dr. Wm. Egbert Robertson continued the discussion. He said that many of the adhesions found about the appendix may be traced to bands that have existed *in utero*. Infection may be at the base of the trouble. Another view is that there is a limit of elasticity of the bowel, and if the muscular apparatus becomes paralyzed the likelihood of disease is greater. Experimentally Pawlow has shown that a reflex inhibition of the gastro-intestinal movements can be produced by stimulation of sensory nerves. This may occur in man, from stimuli from pelvic and abdominal viscera. He concluded by saying that back of chronic appendicitis and cases of stasis there is some factor; that adhesions and bands lead to inflammation, with subsequent pathology through infection; that he has found constipation extremely common in these cases.

Dr. Henry D. Jump said that whether or not a diseased appendix is the cause of constipation and stasis is debatable; the first condition may be the result of the second. Acute appendicitis seldom escapes a correct diagnosis, but still we are inclined to temporize with the condition. The difficulty lies in the differential diagnosis, especially from tubo-ovarian disease. Short acute colic in mucous colitis frequently is not differentiated.

Dr. Geo. G. Ross said that all adhesions or bands, including those found in the fetus, were the result of inflammation. He showed that any interference, as by bands, with the normal lift of 6-7 inches in the ascending colon leads to stasis and fermentation, with absorption of toxic products and resulting general symptoms. He showed by diagram how bands may arise, and by contracting make pressure on the colon, interfering with motility and with the lumen of the bowel.

The importance of making a differential diagnosis from urological complications was stressed. The value of the x-ray in these conditions was doubted. It was pointed out that whenever lymphoid tissue anywhere in the body becomes inflamed there is an increased incidence of appendicitis.

Mary A. Hipple, Reporter.

SOMERSET—MAY

The Somerset County Medical Society met in regular session in the Court House at Somerset on May 16th, with the largest attendance for several years. This attendance was quite gratifying to the secretary, who has held that office since the organization of the society in October, 1898. This is possibly one of the longest, if not the longest term of service of any secretary of a county society in the state. He is looking forward with pleasurable anticipation to the coming state meeting in Scranton which will in all probability be the last such meeting he will be permitted to enjoy.

The meetings of the society come only once in two months and a short business session must be held at every meeting; as a result the scientific part of the program is frequently shortened also. We had with us on this occasion Dr. I. J. Moyer, of Pittsburgh, who is Councilor of the 6th district of the State Society. Dr. Moyer held the close attention of all present when he told us of the honorable calling in which "The Doctor" is engaged, of the character that the doctor should possess. He said the doctor should have at heart not only the physical welfare of his clientele but of the whole community in which he lives. In order that he may be and do all Dr. Moyer described it is essential that he be a member of his County Medical Society, thus becoming a member of the State Medical Society and eligible to membership in the American Medical Association. Thus, he will come in contact with the best medical skill in the world, the better fitting him for the honorable practice of medicine and the ethical treatment of his fellow practitioners. As the "Councilor" Dr. Moyer gave much that cannot and need not be mentioned here. All were highly pleased with what the Doctor said and a vote of thanks was given him.

Dr. Charles E. Hays, of Johnstown, who was to speak to us on "Otitis Media," was unavoidably prevented from being present, as he was called away from home. We hope to have him with us in the near future.

H. C. McKinley, Reporter.

WARREN—MARCH-APRIL

The March meeting was held in the Elks' Parlors, and Dr. Salisbury, of Buffalo, who is connected with Parke, Davis & Company, gave a resumé of the present knowledge of vitamins. He showed a number of lantern slides, which presented the effects of a lack of vitamins in the food, and the subject was well handled. Sixteen members were in attendance. Drs. Robertson and Ball acted as hosts and furnished through the Elks' Club caterer a substantial dinner.

The April meeting was held at the Elks' Club April 17th and was given over to the discussion of business matters. Mr. H. S. Keck, a well-known insurance man, gave an idea of what kind of insurance a doctor should carry. He described in brief the various forms of policies and the particular advantages of each. For protection, the ordinary life policy would seem to be the best. When business interests are to be protected for a short time, the term policy is advantageous. For the young man who wants besides the protection a certain amount of saving, the endowment affords a safe investment free from speculation.

Mr. Emil Lampe, a local banker, gave a very interesting summary of the different kinds of investments, there are. For the Physician, who cannot afford to worry about his investments, the bond is the best form of investment, because it has little of the speculative feature in it. Stocks have varied greatly in the last few years, and a large number have defaulted in their dividend, but bonds have been fairly steady and paid their interest promptly. Speculation is necessary to develop new projects, and the speculator, if successful, must reap large profits because of the element of venture and uncertainty. He is a partner in the concern. Bonds are issued after the organization is successful and are less in the nature of investments than of loans. Any man who expects more than 7% for his money is engaged in speculation. Many bonds, state and municipal, that pay only a low rate of interest may bring a large return to the holder because they are tax free and exempt the holder from a surtax if his income is large enough to require such. Therefore, a 4% bond may be a good investment for a very rich man, but not for a poor man. Doctors next to ministers and school teachers are considered easy marks by the stock salesman.

Sixteen members attended the meeting. Dr. F. G. Shuler acted as host and provided a fine dinner. Resolutions were adopted in regard to the activities of the antinarcotic government agents. While the laws should be enforced it was also necessary to provide some place for the treatment and detention of the chronic addict. Until such a place is provided, physicians may be obliged to use their own judgment as to what an addict may require, and government agents should not be arbitrary in such cases. Warren county is exceptionally free from drug addicts.

M. V. Ball, Reporter.

STATE NEWS ITEMS

DEATHS

Major Dr. Adam Robinhold, well-known physician of Hamburg, died on the evening of May 3rd of Bright's disease. Dr. Robinhold was born in 1888 and was graduated from Jefferson Medical College of Philadelphia in 1913.

Dr. T. H. Jones, of West Hickory, died on the afternoon of April 28th at the Homeopathic Hospital, Buffalo, N. Y., following a long illness. He was born in 1878 and was a graduate of the University of Pittsburgh School of Medicine in 1905.

Dr. C. C. Hersman, of Pittsburgh, aged 69 years, died at his home, April 30th. He was born in West Virginia and had lived in Pittsburgh for 35 years. He had been long an active member of the Allegheny County Medical Society, having been chairman of the Committee on Necrology for many years past. He was at one time Assistant Professor of Neurology at the Western Pennsylvania Medical College, now the University of Pittsburgh. He leaves a daughter, Mrs. Ella Hersman Dosch.

Dr. John H. Egan, for twenty years a police surgeon in Philadelphia, died at his home on April 25th from heart disease. Dr. Egan, who was 55 years old, was born in New York City. He came to Philadelphia when a boy, and after leaving high school he attended the Medico-Chirurgical College and graduated in 1892. He was appointed a police surgeon ten years later, and it is estimated that he has treated 5000 prisoners. He leaves a wife, Mrs. Winifred Egan, and two sisters, Miss May and Miss Vinie Egan.

Dr. Benjamin Gardiner Wilson, of Clarion, died at his home on April 25th after a prolonged illness. Dr. Wilson was a graduate of Kiskiminetas Springs School, Princeton University, class of '98, and University of Pennsylvania School of Medicine, class of '02. He was a member of the Sigma Chi Fraternity, Cottage Club of Princeton, Princeton Club of Philadelphia and the University Club of Pittsburgh. He was also active in the recruiting service during the World War. Besides his father he leaves his widow, who was Miss Mary Margaret Aikins of Pittsburgh, and three daughters.

Dr. Hildegarde H. Longsdorf Lee, wife of Dr. Guy Carlton Lee, of Carlisle died April 21st in the University Hospital, Philadelphia. Dr. Lee was graduated from Dickinson College in 1888, later taking up a course at the Women's Medical College at Philadelphia, where she was graduated with the class of 1890. In 1898 she was elected vice-president of the Cumberland County Medical Society and later became secretary of the organization. Dr. Lee was the daughter of the late Dr. W. H. Longsdorf, of Centerville, and in addition to her husband, is survived by one brother, Dr. H. H. Longsdorf, of Centerville, and a sister, Dr. Zatae Longsdorf Straw, of Mechanicsburg.

Dr. Howard Edward Dean, aged 44 years, senior surgeon at the Braddock General Hospital, died May 4th at the hospital following a short illness from uremic poisoning. Dr. Dean was the seventh physician or surgeon in the family in a direct line of ancestry, and was a son of the late Dr. Edward W. Dean, of Braddock. He attended the Braddock public schools and Geneva College, Beaver, and was graduated from the University of Pennsylvania School of Medicine in 1904. In 1906 he joined the staff of the Braddock General Hospital and was surgeon at the Edgar Thomson Steel Works for three years. He leaves his widow, Mrs. Loretta Kathleen McCullough Dean, a son, Howard E. Dean, Jr.; his mother, two sisters and a brother.

Dr. J. K. Brown, of Brookville, died of peritonitis at the Brookville Hospital on April 27th after an illness of several days. Dr. Brown was born in Summerville in 1859 and at the age of twenty he took up the study of medicine. He was graduated from the Jefferson Medical College, Philadelphia, in 1884, and first practiced in Summerville, from which place he went to Brookville to practice in May, 1899. Dr. Brown was a member of several fraternal orders. He was prominent in State and County Medical Society affairs and served for many years as surgeon for the Low Grade branch of the Pennsylvania Railroad. Besides his wife he is survived by one daughter and two sons.

J. K. BROWN, M.D.

CAT.

ITEMS

Dr. Bernard J. McCormick and Miss Cecelia Virginia Lee, of Pittsburgh were married on May 10th.

Dr. Geo. B. Klump, of Williamsport, has been confined at the Private Hospital with a severe infection of his right arm.

Dr. and Mrs. Wm. J. Wilkinson, of Sellersville, recently returned to their home after spending the winter at North St. Petersburg, Florida.

Dr. and Mrs. H. G. McCormick, of Williamsport, have returned from an extended European and Mediterranean trip. They were members of a party made up almost wholly of residents of Williamsport, which left for a trip abroad last February 4. They visited the Orient and stopped over at many places throughout Europe.

Sir Thomas Lewis, M.D., F.R.S., F.R.C.P., D.Sc., delivered the Seventh Mellon Lecture on the subject "Interpretations of the Initial Phases of the Electrocardiogram with Special References to the Theory of 'Limited Potential Differences'" in the Pittsburgh Academy of Medicine on the evening of May 8th. The lecture was arranged by the Society for Biological Research, School of Medicine, University of Pittsburgh.

The Allegheny County Medical Society is tentatively holding its meetings in the spacious and commodious auditorium of the Pittsburgh Chamber of Commerce. In spite of the greater seating capacity of this room over that of the hall employed for so many past years, on the occasion of the meeting of April 18, when Dr. Grenfell, of Labrador fame, was the attraction de luxe, many were compelled to stand in the rear of the room.

The Engagement of Mrs. Mary Boas Boll, daughter of Mr. and Mrs. C. Ross Boas, of Harrisburg, to Dr. Constantine P. Faller, also of Harrisburg, was announced on May 18th by the bride-elect's parents. Dr. Faller is a son of Mr. and Mrs. Constantine Faller, of Carlisle, and a graduate of the University of Pennsylvania. During the war he served overseas for fifteen months as a captain in the Medical Corps, 6th United States Infantry.

The H. K. Mulford Company, of Philadelphia, gave a dinner on Wednesday evening, May 24th, to the returned members of the Mulford Expedition for Biological Exploration of the Amazon Basin. The expedition comprised the following men: Dr. H. H. Rusby, Dean of the College of Pharmacy, Columbia University; Dr. William M. Mann, United States National Museum; Dr. Orland E. White, Brooklyn Botanical Garden, and Dr. N. E. Pearson, University of Indiana.

On May 25th the Fifteenth Conference of Industrial Physicians and Surgeons was held at the State Capitol, Harrisburg, under the direction of the Division of Industrial Hygiene of the Pennsylvania Department of Labor and Industry. The program was varied and subjects of vital importance were discussed. The program for the Evening Session was a joint session of the Industrial Physicians and Surgeons and the Association of Governmental Labor Officials of the United States and Canada.

Daniel T. Test, superintendent of Pennsylvania Hospital, Philadelphia, was reëlected president of the Hospital Association of Pennsylvania at its annual conference in Harrisburg during the week of May 15th. Leading hospital officials from all sections of the state were in attendance. Other officers elected included: Dr. J. C. Biddle, Ashland, and Colonel J. H. Bigger, Pittsburgh, vice-presidents; Elmer E. Mathews, Wilkes-Barre, treasurer; John M. Smith. Philadelphia, secretary. Members of the board of trustees also were reëlected.

On the Evening of April 26th a banquet was tendered Dr. William M. Guilford, of Lebanon, by the Lebanon County Medical Society, in celebration of his 70th anniversary as a practitioner of medicine and surgery. Although Dr. Guilford is in the ninetieth year of his age, he entered into the spirit of the affair with much zest, and while he is not engaged in active practice, the venerable physician is still enjoying good health. During the course of the evening he was presented with a large bouquet of pink roses.

Nearly all of the members of the Society were present, even the country districts being represented, and all of the members personally paid tribute to his worth and achievements in speeches of more or less length. In addition to fellow practitioners from the city and county, there were present physicians from Berks and Lancaster counties, including Dr. Frank G. Hartman, of Lancaster, president of the State Medical Society, and two State Society trustees, Dr. Theodore B. Appel, of Lancaster, and Dr. Ira. G. Shoemaker, of Reading.

The Allegheny County Medical Society held its annual meeting and banquet April 11, at the Chamber of Commerce Rooms with attendance of 400 members. Dr. W. T. Root, of the University of Pittsburgh, addressed the Society on the subject of "Psychical Research," detailing in a very interesting manner an exposé of the subtleties which impose upon the credulity of even those who rank high in the scientific and literary fields. Lombroso and Conan Doyle are, as most professional men, easily deceived, as their analytic perception of trickery has never been developed. It takes a Thurston to analyze and to expose alleged manifestations from the unknown.

The following officers were elected for the ensuing term: president, Dr. W. F. Donaldson; first vice-president, Dr. R. J. Behan; secretary, Dr. W. H. Mayer; treasurer, Dr. E. E. Wible; directors, Dr. E. B. Heckel, Dr. H. A. Miller, and Dr. J. W. Boyce; censor, Dr. C. B. McAboy; district censor, Dr. J. E. Willetts; Delegates to State Society, Drs. H. A. Miller, E. E. Mayer, J. M. Thorne, R. J. Behan, J. E. Willetts, C. J. Vaux, and C. B. Maits. At a meeting, April 18, the constitution of the society having been amended to provide six additional elective members of the board of directors, the following were elected: for three years, Drs. Paul Titus and E. W. Willetts; for two years, Drs. C. G. Eicher and K. I. Sanes; for one year. Drs. T. G. Greig and W. S. Langfitt.

GENERAL NEWS ITEMS

The Federal Board for Vocational Education conference on industrial rehabilitation was held in St. Louis, Missouri, May 15th, 16th and 17th. This meeting was for state workers in industrial rehabilitation, for persons engaged in work in other state departments, and individuals and agencies interested in the many lines of social endeavor related to industrial rehabilitation.

The following officers were elected for the year 1922-1923 at the recent annual session of the American Medical Association: President-Elect, Ray Lyman Wilbur, San Francisco; Vice-President, Willard Bartlett, St. Louis; Secretary, Alexander R. Craig, Chicago; Speaker of the House of Delegates, F. C. Warnshuis, Grand Rapids, Mich.; Vice-Speaker of the House of Delegates, Rock Sleyster, Wauwatosa, Wis.; Board of Trustees—term expires 1925: A. R. Mitchell, Lincoln, Neb.; D. Chester Brown, Danbury, Conn.; Oscar Dowling, Shreveport, La.; Judicial Council, J. H. J. Upham, Columbus, Ohio; Council on Health and Public Instruction, W. B. Cannon, Boston; Council on Medical Education and Hospitals, William E. Pepper, Philadelphia; Council on Scientific Assembly, E. S. Judd, Rochester, Minn.

IN MEMORIAM

WILLIAM F. LEHMAN, M.D.

Whereas, It has pleased God to remove from our midst, our friend and colleague, Dr. William F. Lehman, and

Whereas, It is fitting and proper that we should give expression to our deep sense of personal loss, and to extend to his family our heartfelt sympathy in this their time of bereavement; therefore, be it

Resolved, That we express our deep sorrow for the loss of a faithful member, an able physician, one who was untiring in his work to help the sick and unfortunate, and always ready to respond to their calls.

His deep religious character, and his profound desire to do good, and his love for his family were attributes which will always be remembered by his friends; therefore, be it further

Resolved, That these resolutions be spread upon the minutes of the Society, that a copy be engrossed and sent to the bereaved family, and a copy to the Pennsylvania Medical Journal.

Delaware County Medical Society.
H. M. Armitage,
F. H. Evans,
G. M. Hughes,
Committee.

DR. JEROME K. PYLE

Whereas, God in His all-wise providence has seen fit to remove from our midst our friend and fellow member, Dr. Jerome K. Pyle, of Gradyville, Delaware County, Pa., and

Whereas, Dr. Pyle was a physician who took his profession seriously, ever ready to respond to the call of duty, thus endearing himself to his many patients; be it

Resolved, That the community has lost an able physician, a martyr to his profession;

Resolved, That the Delaware County Medical Society extend to the bereaved family its sincere sympathy in the time of their deep sorrow; and be it also

Resolved, That these resolutions be spread upon the minutes of the Society, that a copy be engrossed and sent to the bereaved family, and a copy be sent to the Pennsylvania Medical Journal.

Delaware County Medical Society.
H. M. Armitage,
F. H. Evans,
G. M. Hughes,
Committee.

DR. KATE FREUDENBERGER

Whereas, Dr. Kate Freudenberger, a member of the Schuylkill County Medical Society for many years, has departed from this earth and has passed to the Great Beyond; and

Whereas, Her position in the medical profession was unique, in that she inspired a degree of esteem and affection on the part of her colleagues rarely accorded; and

Whereas, Few women had so many friends and no woman fewer enemies; and

Whereas, This appreciation of the woman was primarily due to her attractive personal qualities, among which gentleness, kindness and charity to the deserving were present in overflowing degree; and

Whereas, Dr. Kate Freudenberger was a practicing physician in Tamaqua for many years, with unselfish service of her vast experience and skill in the diagnosis and the treatment of diseases; and

Whereas, Dr. Freudenberger, during this long period of time, performed her duties with unexampled kindness to those committed to her care and with uniform courtesy to all those with whom she came in contact; therefore, be it

Resolved, By the Schuylkill County Medical Society, in session assembled, that we express our great sense of personal and community loss in the taking off of this woman, possessed of great talents and a great soul, and that our sentiments, herewith recorded, be transmitted to the members of her bereaved family.

Resolved, That we respectfully extend to her family our sincere sorrow in their grief, and that this record be spread upon the minutes of our proceedings, a copy sent to her family, and published in the Public Press and the Pennsylvania Medical Journal.

Dr. Wm. F. Doyle,
Dr. Geo. H. Moore,
Dr. Ivon B. Fenton,
Committee.

BOOKS RECEIVED

Book on the Physician Himself. From Graduation to Old Age, by D. W. Cathell, M.D. Published by the Author, D. W. Cathell, M.D., The Emerson Hotel, Baltimore, Md. 360 full pages. $3.00 a copy.

The Psychic Health of Jesus. By Walter E. Bundy, Ph.D., Associate Professor of English Bible in DePauw University. The Macmillan Company, New York, 1922.

Practical Infant Feeding. By Lewis Webb Hill, M.D., Junior Assistant Physician to the Children's Hospital, Boston; Assistant in Pediatrics, Harvard Medical School. Octavo of 483 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

The Surgical Clinics of North America, February, 1922, Volume 2, No. 1, Philadelphia Number. Philadelphia and London: W. B. Saunders Company.

Skin and Venereal Diseases, Volume VII of The Practical Medicine Series, 1921, edited by Oliver S. Ormsby, M.D., and James Herbert Mitchell, M.D., of Rush Medical College. The Year Book Publishers, Chicago. Price, $1.75.

Nervous and Mental Diseases. Volume VIII of The Practical Medicine Series, 1921, edited by Peter Bassoe, M.D., Associate Professor of Nervous and Mental Diseases, Rush Medical College. The Year Book Publishers, Chicago. Price, $1.75.

Eye-Sight Conservation Bulletin I, issued by the Eye Sight Conservation Council of America, Times Building, New York City Price, 25 cents.

Tuberculosis in Infancy and Childhood. Lectures delivered at the Children's Hospital, Philadelphia, under the auspices of the Philadelphia Pediatric Society. By J. Claxton Gittings, M.D., Frank Crozer Knowles, M.D., and Astley P. C. Ashhurst, M.D. With 23 illustrations. Philadelphia and London: J. B. Lippincott Company. Price, $5.00.

The Surgical Treatment of Non-Malignant Affections of the Stomach. By Charles Greene Cumston, M.D., and Georges Patry, M.D., Lecturers at The University of Geneva and Members of The Surgical Society of Switzerland, with an introduction by Sir Berkeley G. A. Moynihan, Professor of Clinical Surgery, University of Leeds. Philadelphia: J. B. Lippincott Company, London: William Heinemann (Medical Books) Ltd. Price, $5.00.

The Thyroid Gland. Clinics of George W. Crile, M.D., and Associates at the Cleveland Clinic, Ohio. Octavo of 228 pages, with 106 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth. $5.00 net.

Surgical and Mechanical Treatment of Peripheral Nerves. By Byron Stookey, A.M., M.D., Associate in Neurology, Columbia University; Assistant Professor of Neurosurgery, New York Post-Graduate Medical School and Hospital. With a chapter on Nerve Degeneration and Regeneration by G. Carl Huber, M.D., Professor of Anatomy, University of Michigan. Octavo volume of 475 pages with 217 illustrations, 8 in colors and 20 charts. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $10.00 net.

Management of the Sick Infant. By Langley Porter, B.S., M.D., Professor of Clinical Pediatrics, University of California Medical School, etc., and William E. Carter, M.D., San Francisco. 654 pages, with 54 illustrations. St. Louis: C. V. Mosby Company, 1922. Price, $7.50.

The Place of Version in Obstetrics. By Irving W. Potter, M.D., F.A.C.S., Buffalo, New York. With 42 illustrations. St. Louis: C. V. Mosby Company, 1922. Price, $5.00.

Radium Therapy. By Frank Edward Simpson, A.B., M.D., Professor of Dermatology, Chicago Policlinic; Adjunct Clinical Professor of Dermatology, Northwestern University Medical School; Attending Dermatologist to Mercy Hospital, Alexian Brothers Hospital, Henrotin Hospital, etc. With 166 original engravings. St. Louis: C. V. Mosby Company. Price, $7.00.

American Travel and Hotel Directory, 1922, issued early each year by the American Travel and Hotel Directory Co. (A Maryland Corporation), Baltimore, Md., New York City, Toronto, Chicago, Buenos Aires, Washington and San Francisco. 2,000 pages. Price, $10.00.

The Newer Knowledge of Nutrition. The Use of Food for the Preservation of Vitality and Health. By E. V. McCollum, Ph.D., Sc.D., Professor of Chemical Hygiene in the School of Hygiene and Public Health, of the Johns Hopkins University, Baltimore, Md. Illustrated. Second edition entirely rewritten. New York: The Macmillan Company, 1922. Price, $3.80.

BOOK REVIEWS

EPIDEMIOLOGY AND PUBLIC HEALTH. A Text and Reference Book for Physicians, Medical Students and Health Workers. In Three Volumes. By Victor C. Vaughan, M.D., LL.D., assisted by Henry F. Vaughan, M.S., D. P. H., and George T. Palmer, M.S., D.P.H. Volume 1, Respiratory Infections. St. Louis: C. V. Mosby Company, 1922.

There is no one in this country better prepared both by natural aptitude, vivid interest, scientific training, and large experience than is Victor Vaughan to set forth a book on epidemiology and public health. His extraordinary researches on split proteins entitle him to enduring fame. These and other investigations yielding results of great and lasting value, have been supplemented by an unusual clinical experience of more than thirty years as Epidemiologist to the Michigan State Board of Health. He was on the Commission which at the time of the World's Fair in 1893, induced Chicago, then drinking water polluted by thirty public and innumerable private sewers, to run a pipe line from a spring near Waukesho, Wisconsin, to supply the grounds on which the Exposition was held. He played a prominent part in the investigation into typhoid fever during the war of 1898, and since that time has been ceaselessly busy in field work, study and research.

The following classification is adopted in these volumes: Respiratory Infections, Alimentary Infections, Percutaneous Infections, Venereal Infections, and Local Infections. This volume is devoted to Respiratory Infections.

The first chapter opens with a preface and introduction as vividly presented as is the subject-matter of any novel.

He entitles the second chapter, "Albuminal Diseases"—this title because he holds that all infecting agents owe their capability of inducing diseases, to their protein constituents, nor is it needful that a protein body should be capable of metabolizing or of reproduction in order to cause disordered function, or disease, in man. It is noted that the protein has no poisonous action until its poisonous group is set free by proteolytic enzymes in the body. This is proved by direct experimentation. Not only are poisons found in pathogenic and non-pathogenic bacterial proteins, but they may also be detected in proteins of animal and vegetable origin. Vaughan holds that it is not necessary that the infecting organism be a feeding, absorbing, excreting, reproducing thing. It may possess none of these attributes of life and still may cause serious disturbances in bodily functions and may result in death. When a poisonous group is completely detached from the protein molecule by chemical agents and injected into animals, it is one of the most poisonous known.

This chapter deals further with "Immunity to the Protein Poison," "The Parenteral Disposition of the Foreign Proteins," "Anaphylaxis and the Infectious Diseases," "Vaccination," "Precipitins," "Agglutinins," "Bacteria," "Pathogenicity," and "Toxins and Antitoxins." It is summarized by the statement that the reactions by the invading bacterial cells and body cells are protein reactions, pollen asthma being just as truly a disease as is asthma caused by bacterial infection.

Chapter three is headed by the title "Pollinosis"; included under this head are hay fever, rose fever, summer catarrh, and autumnal catarrh, due to inhalation of pollen and other particulate protein-containing bodies. A brief but illuminating history is given. The cutaneous test is discussed, as is desenitization. As for prevention, it is observed that every sufferer should ascertain by the cutaneous reaction, to what pollen he has been sensitized, and should at the time of year when such pollen is given off, avoid localities in which the producing plants grow.

The next chapter is devoted to the acute coryzas. The bacteriology is briefly discussed and the condition is attributed to protein sensitization. Coryzas, the author notes, may be caused by any protein, living or dead, organized or unorganized, particulate or in solution.

Chapter five is devoted to the pneumonias. A scholarly historical sketch is given and the specific treatment is discussed at length, as is bacteriology.

Bearing on control, the author states that if every individual practiced proper precautions and avoided to the utmost scattering among his fellow men the diverse forms of life growing in his upper air passages, the morbidity from the pneumonias would be materially reduced. If every physician and other attendant on the sick exercised well known precautions and did not carry infection from one patient to another or permit such infection to be carried, the mortality from pneumonia would be greatly reduced. The exchange of bacteria between individuals is not profitable.

Attention is called to the distribution of respiratory diseases through infected tableware. With proper precautions, strict isolation is not regarded as needful.

Chapter six, concerns measles. It is stated there is no other disease to which man is so universally susceptible. It is attributed to a filtrable virus. There is again an excellent historical sketch bearing on prevalence and virulence; a discussion of army incidence. The periodicity of the disease is considered at length, and as far as transmission is concerned, the author calls this a "visitor's disease," since it is only necessary for a susceptible person to enter the room of one in the transmissible stage of measles, to acquire the disease.

As to control: this depends upon recognition and prompt isolation. A special effort should be made to protect young children. It is suggested, but not urged, that if children who have reached six or seven years of age, could be intentionally exposed to the infection at a time when conditions are most favorable to their care, the death rate would be greatly diminished.

German measles is next considered. The author states that evidence leads to the belief that it is transmitted through formites—that is, garments and garment materials. It is not as actively infective as either measles or scarlet fever, but a relatively small percentage of exposed children catching the disease. Respiratory complications are rare. As for its control, isolation would seem to be wise.

As for smallpox, Vaughan observes that inoculation for this disease was practiced in India before it was introduced into China; this is believed to have been during the third century B. C. The same or a similar disease existed in Egypt about 1200 B. C.; this shown by eruptions on the skin of a mummy belonging to that period. Inoculation and vaccination are briefly but most lucidly discussed. Vaughan states in regard to cause of the disease, that the weight of evidence is in favor of a protozoön. The well understood means of control are clearly set forth.

As to chickenpox, Vaughan states that death has never been known to result from this disease. The period of incubation as given by this author ranges from four to twenty-one days. The chief interest in this study, lies in the fact that smallpox is often mistaken for chickenpox.

Under diphtheria it is stated that there is convincing proof to the effect that the disease existed in Greece long before the time of Hippocrates. There is a discussion of the bacillus; of antitoxin; of morbidity and mortality in recent years; of the Schick test; and of active immunization; of the virulence test; of diphtheria carriers; and of methods of control and eradication.

As to scarlet fever, the author states that it has been demonstrated repeatedly in recent years that scarlet fever patients may be kept in the same ward with other patients without danger of transfer of the disease, provided contact transmission be absolutely avoided. Evidence is to the effect that the virus is found in the discharges from the throat and such other discharges as may come from the ears and from suppurating glands. There does not seem to be danger in epidermal scales thrown off during desquamation. The period of quarantine should be determined by the continuance of the mucous and purulent discharges, and should not depend upon or be determined by the state of desquamation.

Forcheimer is quoted to the effect that this disease is not very contagious, even during the first days of the eruption. Vaughan regards it as a typical contact disease. The contact may be immediate or mediate, direct or indirect. Direct contact is responsible for only a small percentage of cases. The belief seems to be founded that scarlet fever is largely disseminated by fomites. Allusion is made to the reported instance of a lock of hair cut from a scarlet fever patient, causing the disease in a child twenty years later, and to the circumstances that the disease virus has been carried in letters, packages of gifts, merchandise, etc., for hundreds of miles. On this basis Vaughan calls scarlet fever the "neighbor's disease," being spread from family to family in direct proportion to the intercourse between people and interchange of things between families. The most distressing epidemics of scarlet fever are found in small cities and villages where there is a constant visiting, exchange of food, and articles of apparel, where the whole community makes the nearest approach to the conditions of a large family.

The closing of schools on account of the appearance of scarlet fever among the pupils is unwise. Its successful complete isolation of the patient, and thorough disinfection of all fomites.

Mumps was described by Hippocrates. It is due to a filtrable virus which is contained in the saliva of the infected individual. This fact has a distinct bearing on methods of control. It is distributed more or less through fomites, including under this head mess kits and table utensils. It is pointed out that continued bodily activities on the part of adults seems to favor the development of orchitis.

Whooping-cough has its highest death rate among children under five years old. The virus of this disease was described by Bordet in 1900. It is present in the sputum of the patient during the catarrhal stage and during the first week of spasmodic coughing. The organism is a nonmotile coccobacillus. No age is exempt but about 80% of all cases occur in children under five years of age. It is especially prevalent during the spring and summer; this is world wide. The disease is usually transmitted through the air from an infected to an uninfected individual. Direct contact between two is not needful. A child may whoop across a street car into the face of a healthy child and give the latter the disease. The results obtained by the prophylactic use of vaccines have not been satisfactory. Given as a curative means they seem to lessen the severity of the disease. The author is not largely hopeful as to adequate control.

Influenza is dealt with in much detail, indeed this chapter constitutes a monograph upon the subject. There is a perfectly fair discussion of vaccination, but no convincing arguments in its favor.

Tuberculosis received the thorough discussion which this important subject requires. It is noted that the vertebrae of mummies have shown that this had become a parasite of man some thousands of years ago. There is a valuable contribution to the chemistry of the tubercle bacilli. The avenues of infection are discussed and some standard beliefs are rudely shattered. Home care, dispensary care, tuberculosis sanatoria, tuberculosis colonies, tuberculosis hospitals, educational propaganda, are taken up in detail. The results of certain experiments have been summarized and valuable suggestions for future work given.

Under leprosy there is a statement of its present distribution; a study of the bacillus. A consideration of the avenues of infection and means of eradication are set forth.

The symptomology of cerebrospinal meningitis is given; its history; its distribution and mortality; the paths of invasion and the method of control. The detection of carriers is a matter of vital importance. The anti-meningococcal serum has greatly reduced the mortality in all forms of meningitis; this is briefly discussed.

Poliomyelitis or infantile paralysis is ascribed to a specific filtrable virus. Man is said to be the only carrier and distributor. It is stated that Underwood is the first medical man to call attention to this disease; this in 1784. The transmission is from one individual to another through the upper respiratory tract. As for control, the author advises that health authorities demand thorough sterilization of the clothing of those coming in contact with an active case; also, the stool should be thoroughly disinfected.

Next is a brief chapter on glanders, and finally an excellent one on weather and disease.

This is a work, each page of which could be read with profit not only by those working in public health, but by every physician in the country. To say that it is worthy of Vaughan is giving it the highest praise.

Edward Martin.

WANTED.—Assistant Physician at State Institution for Feeble Minded; male, preferably between 25 and 35 years, and capable of doing some laboratory work. Give full particulars in first letter. Send photograph. Address Dr. William J. Steward, State Institution, Pennhurst, Pa.

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ORIGINAL ARTICLES

THE IMPORTANCE OF WEIGHT CONTROL IN THE MAINTENANCE OF HEALTH AND IN THE MANAGEMENT OF DISEASE*

LAWRENCE LITCHFIELD, M.D.
PITTSBURGH

Water and food are the most imperative needs of the body in health and in disease. They are the fundamental needs of the body—far more important than any drugs. Many signs and symptoms generally considered as the manifestations of disease are in reality the result of a lack of water, a lack of food, or of unsuitable food. For example, typhoid fever as described in the older textbooks is a striking case in point, differing as it does so radically from the picture of typhoid fever as seen under modern treatment. The traditional picture of typhoid fever is the picture of nitrogen starvation. The modern treatment of typhoid fever aims to preserve nitrogen equilibrium. Other diseases in which the picture has been modified by modern ideas of nutrition are, diabetes mellitus, nephritis, and cardiac disease.

There are very few diseases that can be influenced materially by drugs, while there are practically no diseases that can not be favorably influenced by wise attention to the water balance and the nutritive needs of the body.

Many a person goes puffing and palpitating through life—his clutch slipping, his cylinders missing, and his radiator steaming on every grade—merely because he has overloaded his engine, is feeding his carburetor with too rich a mixture and has entirely upset the normal mechanism for the regulation of temperature. From time to time he resorts to digitalis, strophanthus, convallaria, strychnia, morphia, or even to a peremptory rest when he can carry on no longer. Such a man might be freed from his discomforts and possibly made 100% efficient simply by removing his self-imposed handicap of surplus weight and by establishing him in a rational way of living. Take a pencil and calculate the extra work in foot pounds required in 24 hours by an individual with 25 pounds of surplus weight, and you will be surprised. If such a one comes into the consulting room he may need digitalis, but his crying need is judicious starvation.

Abnormalities of weight are most obvious and have long received careful consideration by life insurance examiners. Applicants who are 20 or 25 pounds above or below normal weight pay an extra premium for the added risk. Surgeons and physicians, however, in their daily practice give far too little attention to the question of weight.

Scales and measuring rod are indispensable in a properly equipped consulting room, and the record of every patient should show height, weight, maximum weight with date of the same, average weight, and any striking variation in weight during the previous life of the individual with the probable explanation of the same.

A simple rule for the estimation of the normal weight, accurate enough for clinical purposes, is to allow 110 lbs. for 5 feet, and 5½ lbs. for each inch above 5 feet.

In apparent health and in disease any variation from the normal weight should receive careful consideration and the advisability of its correction should be weighed. We can not make a sweeping statement that all patients should be brought to a standard weight, because in certain diseased conditions — diabetes, cardiac disease, and others—it is advisable to keep the weight as low as is compatible with physical efficiency, while in other diseases, notably in neurasthenic conditions, the patient can carry some excess of adipose tissue with advantage.

A striking contrast to the example of obesity with decompensation which we have cited may be presented by the emaciated neurasthenic, the extreme example of which is anorexia nervosa. [The diabetic, the chronic tuberculous, the thyrotoxic, are others.] It is as impossible to relieve the emaciated neurasthenic, without building up her weight, as it is impossible to relieve the obese cardiac sufferer without reducing his weight, but between these extremes there are all gradations.

Let us consider the etiology and pathology of these two conditions. In obesity the muscles are weak, there is low resistance to infection, there is a disposition to diabetes mellitus, the extra weight of the body throws an unnecessary burden on the heart and circulatory system, while the accumulation of adipose tissue in the mediastinum offers a mechanical impediment to the free and normal action of the heart. In the first medical clinic of the Charitée Hospital in Berlin in 1909, His frequently called attention to the presence of a right angled area of relative dullness in the cardiohepatic angle in these cases. I believe this observation is of value and that the angle of His, as I call it, is pathognomonic of a pathological amount of fat in the mediastinum. Furthermore in many cases of obesity there seems to be a chronic toxemia, probably due in part at least, to the inability of the overworked emunctories to take care of the extra amount of waste products resulting from the poorly vascularized adipose tissue, the septic intestinal tract, and the surcharged blood. With advancing age there is apt to be a premature development of arteriosclerosis and other degenerative diseases, myocarditis, angina pectoris, nephritis, and essential hypertension. The blood volume is often small even in the condition which we call plethora.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

The small stomach held high in the abdominal cavity, from the advantageous position which it occupies, empties quickly, preserves a relatively good muscle tone, and maintains energetic hunger contractions, all of which helps to establish in many of these cases the habit of eating more than the body needs, particularly in respect to meat. Overeating with such a stomach tends to cause hyperchlorhydria and this predisposes to gastric ulcer. Many a plethoric inhabitant of Germany had the scant rations, and particularly the low meat supply, of the war, to thank for a cure of his or her hyperacidity.

Injudicious diet during convalescence from infectious diseases, after confinement, and during lactation is responsible for much overnutrition.

Excess of protein in the intestinal tract leads to putrefaction, bacterial changes, and toxemia.

Excess of amino-acids in the blood leads to degenerative changes in the tissues, dysfunction, and interference with normal metabolism.

Overheating of houses and offices interferes with the normal heat regulation of the body, discourages activity mental and physical, and depresses metabolism in the tissues. The result is that food is stored as fat instead of being burned in the muscles and other organs of the body and we have a lowered mental and physical vigor as well as *lowered resistance to cold and to disease.*

In undernutrition on the other hand the stomach is not supported by adipose tissue nor by the normal shape of the peritoneal cavity as found in vigorous muscular health. Muscular tone of the stomach fails and that organ becomes ptosed, dilated, and atonic. Naturally it empties slowly and often incompletely, and hunger contractions are feeble or absent. The patient is harassed by a variety of digestive disturbances and makes frantic efforts to avoid discomfort by denying herself one article of nutrition after another until her diet is actually inadequate to maintain life. The stomach under such circumstances readily acquires the habit of undernutrition and the feeble hunger sensations, if any exist, are neutralized by food long before the needs of the body are satisfied. All the organs of the body suffer impairment of function. The heart becomes weak. The arteries lose their tone. The respiration is feeble. All glandular activities are depressed. The blood-forming organs fail and anemia develops and progresses. Gastric or duodenal ulcer may occur. The vegetative nervous system becomes ineffective and the mechanism for the control of temperature may suffer derangement so that moderate exercise or forced feeding may be accompanied by a rise of temperature. The sensory and motor nerves become erratic, while the reasoning powers and the will lose their equilibrium and vital efficiency. Palpitation, dyspnea, dyspepsia, constipation, neurasthenia, melancholia, hypochondria, hysteria, the pain habit and other psychoses, are but natural consequences of the foregoing derangement. It is probable that the minimum protein requirement is gradually raised, and that antibodies, hormones, epinephrin, thyroxin, and similar necessities may be diminished from lack of sufficient protein supply.

In undernutrition the lack of an excess of carbohydrates in the intestinal tract leads to undue bacterial activity upon nitrogenous compounds present, often resulting in the formation of harmful toxins. The same condition of a lack of carbohydrate in the food may lead to a breaking down of food protein to supply the much-needed carbohydrates, or to a melting down of the body protein for the same purpose with the appearance of creatinin in the urine. This method of obtaining carbohydrates leads to a waste of nitrogenous compounds, and an overtaxing of the kidneys to dispose of this wasted nitrogen, even if toxic compounds are not formed. The lack of a sufficient proportion of carbohydrates in the food supplied interferes with the burning of fats and favors the occurrence of acidosis. This may even occur from protein metabolism under abnormal conditions.

An extreme case of malnutrition may reach a stage when malignancy is closely simulated.

The specific effects of the absence of certain vitamines from the dietary—beriberi, scurvy, rickets, pellagra, etc.—are not considered in this paper.

The effect of maintaining a nitrogen equilibrium was strikingly illustrated at Camp Lee in 1918, on a ward full of operated empyema cases. Eating according to whim and caprice in the traditional way, all were doing badly with a minus nitrogen balance of from 1 to 22 g. daily. With forced caloric feeding, nitrogen equilibrium was reached at between 2,300 and 3,300 calories, and between 3,000 and 3,500 calories the patients showed a plus nitrogen balance, began to gain in weight, and immediately a general improvement in their condition was noted. Every patient in the ward responded in the same way.

Appetite may be efficiently correlated to the body needs in a perfectly normal individual, but, as we have seen, that adjustment is easily disturbed. It is a well known fact that during starvation, with a plentiful supply of water, hunger and appetite disappear in a few days. This explains how easily the habit of undernutrition may be formed.

On the other hand the habit of overeating is just as easily acquired. A pernicious influence is exercised by faulty traditional beliefs such as: that health and resistance to disease increase with increasing weight; that it is all right for an individual to be fat or thin if such is a familial trait; that in a child or adolescent increase in height may be offset against a failure to gain in weight.

In undertaking the management of an individual in health or in disease, the first thing to consider is the weight of the individual. Is it above or below normal? Furthermore, do the best interests of this individual demand an increase or a reduction of his weight? In working out such a problem scales and measuring rod are of great assistance and should be employed when possible. Appetite before taking nourishment and moderate physical discomfort after taking nourishment, are secondary considerations of entirely minor importance, with far less influence on the digestion and assimilation of food than is commonly supposed. While considering the beneficent effects of digitalis, iron, arsenic, mercury, quinine, salicylates, iodides, antitoxins, vaccines, and foreign protein reactions, constant vigilance is necessary lest we have patients dying of starvation while we treat them for cardiac disease, typhoid fever, chronic infection, mechanical interference with digestion and assimilation, neurasthenia, or other conditions. It is always the physician's business to know whether or not the patient is assimilating a sufficient amount of food daily, and if not, why not. The frequent weighing of children and adolescents can not be too strongly urged. Premature arrest of growth as measured by the scales means starvation—qualitative or quantitative—disease, or other pathological condition.

The effects of continued overnutrition or undernutrition have not been sufficiently studied. The causes of many cases of fatness and of thinness are yet to be discovered, and hence when we have corrected the abnormality, more or less blindly, we must not discharge the patients as "cured," but have them report at regular intervals to be weighed and questioned.

Until we know more definitely the specific needs of the body in conditions of undernutrition our only recource is to supply an excess, if possible, of the classes of food for which there is a logical reason. In other words, we may follow the injunction of Bayliss to look after the calories and let the proteins take care of themselves, but we should limit this rule to omnivora and check it with the scales.

CASE REPORTS

Neurasthenia:

Miss M. R., 23 years old, 5′ 5″ tall. First seen February 29, 1920. Weight below 110 lbs. Patient confined to bed and no scales in the building. Laxative or enema taken daily for over a year. Dyspnea on exertion and sometimes attacks of dyspnea while lying in bed at night. Running a slight daily temperature, sweating considerably, very nervous and depressed, bad dreams, paresthesias, reflexes slightly exaggerated. Physical examination, blood and urine, entirely negative. June 25, 1920, weight 136 lbs. Has not needed laxatives or enemas for over 3 months. Walks freely and dances moderately without dyspnea. All symptoms have disappeared.

Valvular Disease:

Mrs. W. G. S., 45 years old, 5′ 4″ tall. First seen June 26, 1919. Average weight for years about 92 lbs.; maximum weight, in 1918, 110 lbs.; present weight, about 100 lbs. Complaint: dyspnea on exertion for over a year, edema of the feet and ankles and lower eyelids, fainting spells from time to time, constipation, cardiac palpitation when tired or excited, conscious of thumping of the abdominal aorta. Examination of blood and urine, negative. Physical examination negative except general splanchnoptosis and evidence of mitral insufficiency, with beginning stenosis. February 9, 1920, weight 129 lbs., symptoms have all disappeared, no palpitation or dyspnea on moderate exercise. Leading a moderately active life without discomfort. Physical signs, on examination of the heart, the same as previously.

Infection:

Miss G. L., 30 years, 5′ 2″ tall. First seen January 19, 1920. Weight, 94 lbs.; average weight, 95 to 100 lbs.; maximum weight, 114 lbs. in 1909. Worried about her thyroid, which is barely visible and palpable, headaches, menstruation irregular, intervals from 3 weeks to 2 months. Pulse 120, slight tremor, slightly excessive perspiration, no eye signs. Easily agitated, knees frequently give out, backache all the time, constipated, occasional laxative, tonsils enlarged, have the appearance of chronic infection. These were ordered removed, which was done on June 30, 1920. Urine examination, negative; blood examination, moderate secondary anemia. Wassemann, negative. April 19, 1920, went to bed for a rest cure, weighing 93 lbs. October 18th, weight 120 lbs., bowels regular, feeling very much better, beginning to sit up. December 1st, 126 lbs. May 20, 1921, basal metabolism normal. Physical condition very satisfactory; mental and nervous symptoms improving.

Chronic Hyperacidity:

Mr. G. L. C., 43 years old, 5′ 10″ tall. First seen April 22, 1920. Weight 190 lbs. net, average for the past 10 years. Has complained of hyperacidity for 14 or 15 years. Has spent a great deal of time under the care of specialists for the treatment of gastric or duodenal ulcer and for colitis. Had appendectomy four years before, and gastroenterostomy done two years before he consulted me. Symptoms now about as bad as ever. Belching, vomiting of mucous, gnawing pain across the upper abdomen, etc., etc. Consumes enormous amount of bicarbonate of soda. Urine and blood examination negative. Put on a bland diet of low caloric value with low protein and practically purin free. July 2d, weight 172 lbs., rarely has any symptoms, scarcely takes any soda, feels better than he has felt for years.

DISCUSSION

Dr. Alfred Stengel (Philadelphia): The subject that Dr. Litchfield has introduced is, of course, a large one; and it would be impossible either to present in a paper or to cover in a discussion even an outline of all the important factors bearing on the matter of nutrition. In hearing the paper there have been brought up to me particularly certain thoughts with regard to the effect of adequate or inadequate nutrition upon resistance to disease, and I choose rather to speak of this aspect of the question.

The physical questions involved in the carrying of an undue amount of weight by the cardiac patient, or the difficulties introduced by an undue loss of weight on the part of certain neurasthenic and gastro-intestinal subjects, are, in a sense, purely mechanical questions. But there are vital questions involved in nutrition, about which we can only speculate and not make very many positive assertions; yet the fact of their existence is apparent to all of us. Thus, in the child with adequate nutrition there is a certain resistance to disease that does not exist in one with either over- or under-nourishment; and whether over- or under-nourishment is the worse of the two, is a question that is not so easy to answer.

I am thinking of the development of intercurrent infections in persons of lowered vitality, and it has often impressed me very much that we are remiss in our management of the type of cases in which from time to time, local infections occur, and in which, consequently, from time to time, we advise this or that special form of treatment or operation, losing sight of the underlying predisposition. Let us think of sinus troubles and various other forms of disease of the upper respiratory tract. No doubt the same thing applies to infections elsewhere. These conditions are treated as entities—as of course they are in a sense—but behind the local condition, and particularly in cases in which a recurrence of the same or similar localized infection occurs in the same individuals, is the matter of the general nutrition and the bodily resistance dependent upon it. It is hard to separate, in the discussion of etiology, two factors which seem to me equally important in the development of disease: chronic fatigue and improper nutrition. If we study cases of recurring local infections or successive local infections from the standpoint of the general nutrition of the patient and of the habits of life which contribute to chronic fatigue and are able to correct these difficulties, we shall have less to do with surgical or specific serological or vaccine treatment of local infections. This is the attitude we must take, if we wish to treat disease from the broadest standpoint.

One more word, on another aspect of this topic, suggested to my mind by Dr. Litchfield's paper: it is our duty as physicians, particularly those who have to do with hospitals, to look into the matter of the diet of patients more carefully than, perhaps, we have done. We take care of a great many of the details of the treatment, the administration of drugs, the prescribing of operations and the giving of special kinds of treatment, and leave the important matter of diet to the housekeeper or cook, rarely knowing what has been furnished to the patients in the way of nutrition in many of our important cases, and not knowing what alternative possibilities of diet exist in the institution. I think I can make that as a charge against the majority of our hospitals and physicians in hospitals: that they have a grossly inadequate knowledge of what the diet consists of and what the possibility of substitution is. They are surprised at the lack of gain in patients who sorely need gain in weight, and are unaware that the food supply is insufficient to bring about the desired result.

The only way in which the matter can be checked up is by watching the patients from the standpoint of weight. The difficulty of weighing bedridden patients is one of our handicaps, but even in these, a fair estimate of weight can be made from mere inspection. Our attention should be focused more definitely on this matter of the nutrition of patients and its influence on their convalescence on the one hand, and their susceptibility to successive localized troubles, on the other.

Dr. Theodore Diller (Pittsburgh): There is one phase of the subject of this paper that greatly interests me, and that is the matter of the weight and height of adolescent children. In many of our well regulated private schools, records are kept; and also in some of our public schools. This should be universal. It is a very simple matter to take the weight and height of growing boys and girls, and record them so that they shall be accessible to the parents and to physicians in cases of illness. Such records are of great value. They can be made so simply that we should use our influence to procure, if possible, a universal habit in this respect.

There is one great remedy for building up a child or adult, especially a growing boy, which I think has not been touched on—a very great remedy that must not be lost sight of: and that is sleep. I know that boys and girls who are run down may frequently be built up by procuring for them an hour or two of extra sleep. I have often seen this accomplished. It is one of the very simple things that we all know about, but that some of us overlook.

Pardon me for making a little personal reference. I wonder whether there is anything that so quickly reduces weight as seasickness. Three weeks ago, I crossed the ocean with my fifteen-year-old boy. I knew that he had run down in weight somewhat. He was seasick nearly the whole way across; and when he went from Montreal to Baltimore to go to school, the headmaster sent me a letter that rather startled me, showing that the boy had gone down five pounds in weight from his previous record. I knew that he had run pretty hard, sight-seeing, but did not think this could account for the loss. Under the simple plan of the schoolmaster, which he had instituted before I communicated with him, and which I emphasized, which consisted of sleep, freedom from work, and the sunshine of the Maryland hills, the boy in three weeks has regained three of those last five pounds.

Dr. Elliott P. Joslin (Boston): We should all be very grateful to Dr. Litchfield for his paper on weight control. Evidently he has brought the matter to your attention before; because it is quite evident, in glancing around the audience, how comparatively few of the members are actually overweight. Possibly the normal ones came to the meeting, and those that are overweight stayed at home.

Although it is right to lay emphasis upon obesity it should be borne in mind that age is of great importance in the significance of overweight. Under the age of thirty-five, it is safer to be overweight than underweight, although the reverse is true after that age. It is a fact that children tend rather to be underweight than overweight; and recently it has been brought out in studies of some of the private schools in Boston that the children in them tend more to be underweight than overweight. Dr. F. G. Benedict once said to me that if one observed the girls of the Girls' Latin School on their way home one would see comparatively few overweight.

One must not forget that below the age of thirty-five, the expectation of life is better if there is overweight; but that after the age of forty, those who are of normal weight or overweight are nineteen times as liable to diabetes as those who are five per cent or more underweight.

Artificial changes in weight often come on suddenly. That is important for those who are doing tests in metabolism to bear in mind. Recently Dr. Benedict and I were worried because, in a series of one hundred and thirteen diabetic cases, we noticed sudden fluctuation in weight, occurring within a few days; and we wondered whether these changes would vitiate our statistics. A patient might lose and gain a great deal of weight in a few days, and yet it was obvious that the greater part of the gain or loss was due only to retention of water. It was a question how to estimate the metabolism in these cases, whether by the original weight or by the daily weight. It was decided to follow the usual practice of the laboratory and to reckon it by the daily weight; but in the series there were cases in which these changes in weight were so considerable that it was found necessary to discuss these cases by themselves.

Dr. Judson Daland (Philadelphia): Dr. Litchfield has wisely recalled to our attention some things that we all know but often forget. What he said regarding water interested me particularly, because for many years I have observed how frequently and unconsciously individuals habitually drink an insufficient amount of water daily. The physicians recognize this condition, not while taking the history, but by observing that the urine has persistently a high specific gravity and the amount excreted daily is small. I have learned the value of asking the patient to note when he drinks water and in what amounts. I recall a man who had been constipated for fifteen or twenty years. He drank water or wines only at meals. His constipation was relieved by drinking a normal quantity of water daily.

I have also been interested in the recording of weights. Dr. Litchfield spoke of the use of the scales and the measuring rod, which should not only be in every physician's office, but also should be in a convenient place, so as to be easily employed. Dependence on other sources for information as to weight is usually unreliable.

It is important to remember that during each 24 hours marked physiological variations of two or more pounds may occur. The variation in the weight of ambulatory patients may be diminished by the removal of the coat and vest. In chronic diseases, such as pulmonary tuberculosis, for example, the patients should purchase bath room scales, and weigh themselves in the morning on rising, while nude and before eating, drinking, defecating or urinating.

Dr. Diller referred to his experience in the case of a member of his family. This recalled to my mind the case of another boy who happened to take dinner with my family—one of those two o'clock Sunday dinners. All were weighed before and after the meal, and it was found that a delicate debutante in the family had gained two pounds and a half, and the small boy four and a half, the average gain of all adults present being three pounds. The amount of liquids consumed plays an important rôle in interpreting these results.

Dr. Hobart A. Hare (Philadelphia): When I came forward to discuss Dr. Litchfield's paper I did not know that Dr. Joslin was about to take the wind out of my sails by considering the matter of age in relation to weight, which was my theme. I was not fortunate enough to hear all of Dr. Litchfield's paper, but I do not think that sufficient stress has been placed upon what may be called human types. I amuse my students frequently by telling them that they will meet patients with the physique and temperament of the Newfoundland dog, and others with those of the fox terrier. The former is slow in his movements and can easily take on weight, while the fox terrier is quick and active, and will not fatten before he gets old, when fatness is an evidence of disease. These classes of human beings represent different pictures regarding weight and height, regarding reaction to infectious diseases, and reaction under surgical operations, as well as in respect to the whole life-history of the patient.

I think that Dr. Joslin has done well to consider the weight according to age; because we regard certain heights and weights as normal at one age and quite abnormal at another. Again, it seems that the only hope we have of getting a clear conception of the condition of those who are under- and those who are overweight will come from the more advanced studies made regarding metabolism. I am inclined to think that the study of height, weight and mental processes is not going to get us far towards the real end until we use the metabolimeter or some other method equally good, and thereby are led to conclude that for that patient there is under- or overweight. There is often some disorder in those glands that one calls the endocrines. My own experience is that, within certain limits, no one is over- or underweight, if you consider his type, if it can be proved that his physical processes are going on normally. This is best estimated by means of instruments of precision. I think that the greatest mistakes are those that are made in trying to make someone fat who is thin, or someone thin who is fat. Many of the fat people do not present the hebetude of the hypothyroid case. They are charming persons, live happy lives, and are only annoyed by the fact that they consider themselves overweight. So I do not think that it is possible to say, except within broad limits, that a person is definitely underweight or overweight, unless there are symptoms and changes associated with these weights which may be said to add one more, or several more, stones to the arch which makes the diagnosis.

I was interested in what Dr. Joslin said about the conditions in persons under thirty-five, and over forty years of age. These conclusions are of great importance to us. Those people who are lean, for some reason, seem to be benefited by inheritance, if I may use such a term, in vital resistance. As a class, they have much more vital resistance than those who are fat. That brings me back again to that same point of metabolic change. My own personal feeling is that if a patient came to me who seemed to be overfat, and I thought that he or she was so, I should want, before instituting any methods to change the weight, to have some experiments made to determine exactly what the condition of nutrition was, rather than to be satisfied with the fact that the patient was twenty or twenty-five pounds over the scale determined by averages. Within certain limits, the same thing is true in regard to lean persons.

I am glad that Dr. Barker is on the program to discuss the bearing of the endocrine glands; because I think that the addition of his remarks to the discussion brought up by Dr. Litchfield will be advantageous to us and will serve to emphasize some of the points that I have made, for after all, the endocrines are concerned with some of the points in regard to metabolism that I have raised.

PYELITIS IN PREGNANCY*†

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This subject has been discussed so thoroughly and frequently during the last few years that the medical profession is quite generally aware of the frequency with which pyelitis occurs during pregnancy and the puerperium. Nevertheless there are many cases which go unrecognized and untreated until the condition has become a serious matter for the patient, when it might have been easily and successfully combated in its incipiency.

When it is realized that probably 15 or 20 per cent of all pregnant women are affected to some extent by pyelitis the need for keeping this possibility in mind can be more fully appreciated. A woman, toward the middle of her pregnancy, may complain of backache, with headache and general indisposition, and even occasional sensations of chilliness followed by fever, without attracting much attention if the symptoms soon subside. The physician in charge may even find a trace of albumin during the course of his routine urinalyses; and because the microscope discloses no casts, but rather a profusion of leucocytes, the first impulse is to attribute the pus cells, with their attending reaction for albumin, to the fact that voided specimens from women are almost always thus contaminated by vaginal discharges. A simple catheterization would, of course, rule out this cause for such findings, and should be done upon the slightest suspicion, if for no other reason than as a control.

ETIOLOGY

A review of the literature on this subject shows many confusing differences of opinion, both as to the cause of pyelitis at any time, and also concerning its great frequency during pregnancy and the puerperium. Webster,[1] in fact, states his belief that pyelitis is no more common during pregnancy than in the nonpregnant state and that intra-abdominal pressure from hydramnios, twins or other cause is of no significance.

Respecting its mode of onset, there is still further dispute. The consensus of opinion is to the effect that pyelitis originates as the result of an ascending infection traveling through the lymphatic system. Various investigators[2] have pointed out the fact that there is a free anastomosis between the lymphatics of the bladder at one end and the lymph apparatus of the kidney at the other. Furthermore, the right kidney is more often affected than the left and the explanation has been suggested for this[3] that an anastomosis existing between the lymphatics of the ascending colon and the right kidney is responsible, as proved from the fact that there is no such connection on the left side. Direct infection from the blood stream has been plausibly blamed, while some authorities[4] are convinced from both clinical and experimental evidence that the lymphatics play an unimportant rôle as compared to the lumen of the ureter in the travels of an ascending infection.

In spite of these contradictory views, it will be seen on briefly summarizing the situation that there are certain outstanding features which demand consideration: (1) The infecting organism is usually the colon bacillus. (2) Intestinal disturbances, such as diarrhea or constipation, are commonly present. (3) Hemorrhoids or fissures seem to have a predisposing influence. (4)

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Pregnancy, especially if the uterus be over-large from one cause or another, or the abdomen be pendulous, tends to both constipation and increased intra-abdominal pressure with pelvic congestion, hemorrhoids, etc. (5) Lax pelvic floors, as seen in many multiparæ, together with cervicitis and leucorrhea may be of significance. (6) The general hyperemia of the genitalia, as Leavitt[5] points out, may produce sufficient swelling of the ureteral mucous membranes to cause a stasis of the urine at some point between the kidneys and the bladder.

There is, therefore, more than sufficient reason for the suspicion that the intestinal tract is seriously involved in this matter of the origin of pyelitis.

That intra-abdominal pressure unequally applied also has some bearing on this question seems to be evident from the fact that, among our cases of pyelitis during pregnancy, right positions of the fetus occurred 1½ times more frequently than left positions. In view of the general predominance of left over right positions, the significance of this factor is still further emphasized. Assuming that the right kidney is more susceptible to infection because of its lymphatic connection with the colon, pressure from right positions of the fetus might reasonably be expected to result frequently in a pyelitis on this side.

CONSIDERATION OF PYELITIS DURING THE PUERPERIUM

If the term pregnancy may be used in its broadest sense, and interpreted as embracing all phases of the pregnant state from conception to the completion of involution after delivery, a brief consideration of pyelitis during the puerperium is permissible.

It is unquestionable that pyelitis at any time tends to recur, and that even a mild pyelitis during pregnancy is quite liable to flare up soon after the stress and strain of what is so aptly termed labor. At the same time, I have been profoundly impressed during the last few years by the increasing frequency of pyelitis appearing for the first time during the puerperium. It is possible that it was formerly overlooked, and the elevation of temperature, the chills and the backaches which accompany it were attributed to the "coming of the milk" and termed "milk fever," or blamed on the bowels, or the stitches, or retained lochia, or on any one of several other good alibis. If the trouble subsided fairly promptly, as many times it would, nothing more was thought of it, even though that woman may have had a low-grade pyelitis grafted upon her by her pregnancy and parturition, to show up at more or less infrequent intervals as time went on.

Careful investigations of elevations of temperature during the puerperium of patients on my service has disclosed the surprising fact that a great majority of them are due to pyelitis. This has been demonstrated by the appearance of pus in the urine of two or more catheter-drawn specimens, and conclusively enough proved by the benefits obtained from appropriate therapy. It was soon discovered that pyelitis was first seen in the puerperium as compared to pregnancy in about the ratio of 5 to 4. This is not unduly surprising when one considers the amount of traumatism to all parts of the pelvic canal by the pressure, distortion, laceration, and protrusion of the rectal mucosa incident to an ordinary labor. If the establishment of pyelitis by the lymphatic route be conceded, there is an easy path available under these circumstances, in the direct lymphatic connection between the rectum, the lower uterine segment, the bladder, and the kidneys.

It is my firm conviction, however, that pyelitis in the puerperium is more common than was formerly the case in my clinic, and for this I have an explanation which may be worth consideration.

Vaginal examinations during labor have become more and more limited during the past few years until now they are done only for some definite reason, whereas rectal examinations have been not only entirely unrestricted in number but are actually being made more and more frequently by both staff men and internes. This has been permitted and encouraged either for definite information or merely for the sake of increased proficiency.

It is quite conceivable that rectal examinations carried out too forcibly or repeated too frequently may abraid the mucous membrane and otherwise traumatize the wall of the rectum from within, thus forming the starting point for a colon bacillus invasion of the rectal lymphatics. At present I have no figures collected to support this theory, but there seems to be a logical connection between an apparent increase in the incidence of pyelitis during the puerperium and an unrestrained invasion of the rectum by exploring fingers. It is more than possible that the use of sterile, rather than merely clean, gloves, and a limitation of rectal examinations to the number actually required for the proper management of a labor may prove of considerable value in this connection. The substitution of rectal for vaginal examinations during labor has undoubtedly been a step forward, but moderation is desirable in all things.

TREATMENT

Treatment of pyelitis is both prophylactic and active. Because of its prevalence during pregnancy, the patient should be cautioned to keep her bowels regular and active by proper diet as well as the use of liquid petrolatum, and mild laxatives, if necessary. She thus avoids dangerous periods of both constipation and vigorous purgation. She should take at least two quarts of fluid daily, in the form of water, soup, milk, tea, coffee, or cocoa, and at the first appearance of suggestive symptoms the possibility of pyelitis should be thoroughly investigated. A careful examination of a specimen of urine obtained through a catheter is essential in this respect.

With the establishment of a pyelitis the accepted treatment has become almost a matter of routine: rest in bed, catharsis, increased fluid intake, bland diet, and a period of about a week during which bicarbonate of soda is administered in doses of one dram three or four times daily. When the urine becomes alkaline an abrupt change is made, and by the daily use of 40 or 50 grains of hexamethylinamine combined with a like amount of acid sodium phosphate, the urine is acidified. Frequently alternating the reaction of the urine back and forth between alkaline and acid is more effective than the simple administration of one or another of the so-called "urinary antiseptics." During the time that hexamethylinamine is being taken, the appearance of blood in the urine is evidence of over-dosage and the treatment should revert at once to the first stage wherein the reaction is alkaline.

Cystoscopic examination of the bladder, catheterization of the ureters, and injection of the pelves of the kidneys are measures which must be carried out in a certain number of instances, even in the presence of a pregnancy. The kidneys should be x-rayed for evidence of stone and in all cases the possibility of tuberculosis should be definitely excluded.

SUMMARY

1. Pyelitis is sufficiently frequent during pregnancy and the puerperium that such a possibility should be thoroughly considered whenever suggestive symptoms occur.

2. In making a diagnosis, voided specimens are useless because of their almost invariable contamination by vaginal discharges, whereas the presence of pus cells in a catheter specimen is of the greatest significance.

3. Considerable difference of opinion exists as to the origin and action of the infecting organisms, but the consensus of opinion favors the idea that the kidneys are invaded by the lymphatic route in the majority of instances. Direct extension upward from the bladder through the ureters to the kidney is, however, by no means impossible or unlikely.

4. The fact that intestinal disturbances predispose, that the colon bacillus is the usual organism found, and that pregnant women with large or pendulous abdomens are especially prone to pyelitis, raises the suspicion that the original source of the trouble is most often the large intestine.

5. The right kidney is more often affected than the left, its greater susceptibility being due, probably, to its having a more direct lymphatic connection with the bowel than does the left.

6. Right positions of the fetus predominate in number over left positions in patients having pyelitis, in spite of the greater frequency with which left positions occur in general. This sustains the idea that intra-abdominal pressure is a causative factor in pyelitis, because while the right kidney is more susceptible, there should be no difference in the incidence of right over left positions were it not that unequal pressure is a contributing cause.

7. Quiescent pyelitis of pregnancy often flares up during the puerperium, and pyelitis originates during the puerperium more often than during pregnancy. The sum of these two is a total which makes the incidence of pyelitis far greater in the puerperium than at any other moment of the pregnant state.

8. Rectal examinations carried out too vigorously or too frequently during labor are probably responsible for the fact that cases of pyelitis in the puerperium seem to be increasing in frequency. While the employment of rectal rather than vaginal examinations during labor is unquestionably a safer procedure, their number should be restricted to the actual needs of the case, and every care should be exercised to avoid injury or abrasion of the rectal mucosa.

9. Appropriate medical treatment is usually effective in the early stages of pyelitis, but in the more advanced cases, catheterization of the ureters and injection of the pelves of the kidneys may be necessary, even in the presence of pregnancy.

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DISCUSSION

Dr. Edward A. Schumann (Philadelphia): This paper by Dr. Titus covers the subject beautifully and there is but little to add. He did not go into the subject of diagnosis of pyelitis in pregnancy in detail. From my own experience of all the surgical complications of pregnancy pyelitis offers the greatest difficulty in diagnosis in the first 24 hours after its onset. Time after time we have a woman brought into the maternity service of hospitals with all the evidences of an acute surgical abdomen: generalized pain, rather more localized on the right side, elevation of temperature, evidence of gastro-intestinal disturbance and usually a considerable leukocytosis — indeed twenty to thirty thousand has not been uncommon in my experience. Unfortunately, the urine, even on examination of the catheterized specimen, frequently shows no changes for from 24 to 48 hours of the onset of systemic symptoms. It is in this period, when we have no definite evidence as to the cause of the abdominal lesion, that diagnosis is obscure. The only point of diagnostic significance in the first 24 hours has been the rather high leukocytosis coincident with pyelitis.

With regard to treatment, as Dr. Titus has outlined, usually the simplest therapy relieves the condition: rest in bed, catharsis, increased fluid intake and alternation of the reaction of the urine, are usually sufficient. I believe we have been prone to invade the ureter with the catheter too frequently. If, however, the pus does not rapidly disappear from the urine and the temperature come down and symptoms subside in six to ten days, then I believe it is time to attack directly the seat of the infection by flushing the pelvis of the kidney. Very recently this matter has been cleared up by O'Connor, of Chicago, who demonstrated that we had been using nitrate of silver in too strong concentration and causing exfoliation of the epithelium of the kidney pelvis. He recommends the use of mercurochrome as a direct antiseptic and germicide to the kidney pelvis. The only thing with which I cannot quite agree with Dr. Titus is the question of greater frequency of puerperal pyelitis as compared with that of pregnancy. Most of the cases at the Jefferson have occurred between six to eight months of pregnancy and the bulk of the cases are the type that have never consulted a doctor; while in puerperal pyelitis I still feel that the majority begin during the last trimester and have apparently no connection with the manipulation of the birth canal.

Dr. Collin Foulkrod (Philadelphia): I have nothing that I can add to the paper under discussion. I believe the topic has been covered as well as it can be covered. There is just a personal point of view that will reënforce one or two things said. First, I believe the catheterization of the ureters should be reserved for the semichronic stage. In the last few cases that I have seen it seemed as if the acute stage was very acute. In cystitis, ascending conditions might be aggravated by catheterization. One must be careful not to produce any ascending trauma and a pyelitis by early catheterization. Second, it occurred to me when looking over statistics that in our work there were more cases of puerperal pyelitis than usual. This may interest Dr. Titus because in my clinic, rectal examinations are not practiced. I do not believe that it is a safe bet to make a rectal examination and then turn around and do a forceps delivery, even when changing gloves. I take my hat off to the colon bacillus, it is most persistent. I am very careful about rectal examinations. I think that in other clinics where rectal examinations are not made, pyelitis is present in some measure. I would explain this by saying that since the influenza epidemic in 1918 we have had more cases, perhaps due to the development of streptoccic organisms at this time. I do not think our statistics are right.

I want to cure my cases without trauma, and therefore prefer to diagnose them without catheterization. In many instances when there is a pain in the back associated with acute onset, I start with medication as a diagnostic measure. Many men criticize me for giving urotropin, but it has been eminently successful in my hands and very few women have come to catheterization. When catheterized there was marked recovery in subacute pyelitis in pregnancy. I have in mind two women who in the past five years were particularly bad cases. One came in twice with recurrent attacks of pyelitis in pregnancy. The first one miscarried, and the second one went to term and was delivered. Later Dr. Anspach removed a stone from her kidney. So be careful that your chronic cases do not have a stone.

Dr. Leon Herman (Philadelphia): I have here the clinical history and findings of a remarkable case of pyelitis in pregnancy occurring in the service of Dr. Richard Norris. This patient was admitted to Dr. Norris' service in the Methodist hospital one week over-due. She had noticed a tumor in the left lower quadrant of the abdomen for some time. The tumor was quite evident to those who examined her, and it was supposed by the patient to be the fetal head. The patient was admitted February 11th of the present year. She was delivered under anesthesia the following day. The position was R. O. P., which threatened to change into a face presentation. After delivery, the tumor, which was about the size of a small grapefruit, was even more distinct than before. The urine at this time contained some pus cells but her temperature was normal and there were no localizing symptoms of pyelitis.

Several weeks after delivery the abdomen was opened in the belief that the tumor was an adnexal cyst but the tubes and ovaries were found to be normal. The cause of the tumor was found to be a movable kidney which could be displaced easily into the pelvis. The appendix was removed.

Nine days after the operation she had a severe chill, followed by a rise of temperature to 105° F. and a leucocytosis. The pyuria was now more marked. At this time the patient was referred to the writer for urological study. The differential kidney studies showed a normal right kidney with an infected left one, the latter being much (50%) reduced in function to phthalein. After pelvic lavage the patient improved somewhat but the symptoms recurred, and on March 19th it was decided to expose the kidney. This was done through the usual loin incision. The kidney was less dilated than we expected to find and the parenchyma seemed to be well preserved. We accordingly did a nephropexy (Kelly), using heavy silk ligatures. The temperature became normal nine days after operation. On the 26th day after operation she was sent home apparently well. The patient has remained perfectly well. Dr. Norris tells me that this case is unique in his experience.

I would not attempt to discuss this subject from the standpoint of the obstetrician, but it is probable that pyelitis in pregnancy has much in common with uncomplicated pyelitis, the predisposing factor being obstruction, the determining cause a blood borne infection. The treatment, I agree, should be conservative but I do not believe in persisting in this in bilateral cases when we find that renal destruction is proceeding rapidly. I believe also that these patients should have pelvic lavage when the infection is more or less quiescent, that is between the acute exacerbations. If there is marked evidence of pus retention at the time of the first cystoscopy, it is our practice to insert an indwelling uretral catheter for twelve or twenty-four hours before irrigating the pelvis. Over-distention of the renal pelvis has the danger of sending infection into the uriniferous tubules which later have a free communication with the pelvis. In certain instances the catheter is allowed to remain in situ for several days (as long as six days in some cases) and the prolonged drainage thus provided gives excellent results. The reason for this improvement is due largely to the fact that, the obstruction being removed, the relaxed and inflamed ureter has an opportunity to recover its tone, upon the normality of which recovery so much depends.

Dr. Titus (in closing): I am glad that Dr. Schumann has covered the question of diagnosis so thoroughly. Of course, in a paper of this sort it was impossible for me to go into these details as he has done.

Both he and Dr. Foulkrod have emphasized an important point in their caution against too early catheterization.

In respect to rectal examinations, I hasten to disclaim the idea that I approve of them after one is scrubbed and gloved for a delivery.

GASTROJEJUNAL ULCER*

JOHN J. GILBRIDE, M.D.
PHILADELPHIA

Prior to the introduction of the operation of gastroenterostomy surgery had nothing to offer in a curative way for gastric ulcer. Medical treatment had little if anything more for the cure of this disease. Theoretically the basis for medical treatment for ulcer of the stomach seemed reasonable enough, founded on the principle of physiologic rest. But what was then thought to be physiologic rest was not physiologic rest at all for the stomach, but physiologic mischief because of what we now know about the secretion of the gastric juice. The vicious circle is carried on by the ulcer in increasing the acidity of the stomach secretion and the hyperacidity in turn is a factor in the prevention of the healing of the ulcer. The modern treatment of these ulcers is based on this knowledge.

We owe a great deal to Nicoladoni, Wölfler, Lücke, Braun, Courvoisier, Von Hacker, Czerny, Peterson and others for the development of gastroenterostomy, and to the Mayos, Monyihan and others for improving it.

Gastrojejunal and jejunal ulcers are the most common and the most serious complications of gastrojejunostomy. The lesion is usually single, and most frequently located at the stoma, but multiple ulcers at the stoma are not uncommon. Patterson states in his report of cases that in most instances the jejunal ulcer is some distance from the stoma. The ulcer in the jejunum may be situated directly opposite the opening in the stomach or it may be some distance from the stoma, nearly always in the efferent loop.

It is difficult to estimate the frequency with which gastrojejunal and jejunal ulcers follow gastroenterostomy. Judd[1] says that in the Mayo clinic 55 definite secondary ulcers were found in 4,324 gastroenterostomies. These represented the cases which returned to the clinic. If others had occurred they might have gone elsewhere. Patterson gives the percentage of these ulcers as 2 to 4 per cent. Only one case of jejunal ulcer after gastrojejunostomy for malignant disease has been reported. (Wright, C.[2])

Ulcer occurs in the line of junction of the stomach and jejunum as a gastrojejunal ulcer or in the jejunum below the line of union as a jejunal ulcer. There is no record of the occurrence of a primary jejunal ulcer, with one exception (Schmilinsky[3]). He thought the case might have been syphilitic in origin but he had no proof of this. We believe that gastrojejunal ulcer is due to the gastrojejunostomy and that jejunal ulcer is the result of an acid secretion coming in contact with a structure that has been accustomed to an alkaline secretion only.

Jejunal ulcer has not occurred following gastroduodenostomy or other plastic operations on the pylorus, but gastroduodenostomy is not suitable in a great many cases of ulcer of the pylorus because of the extensive pathology. Physiological surgery is the ideal sought, yet this must give way to the need of dealing with pathology as there can be no compromise with disease in pursuing an ideal at the expense of the patient. Gastroduodenostomy is most easily performed in those very same cases which give the best results following gastrojejunostomy, i. e., cases in which there is a healed lesion or a small, easily excised lesion at the pylorus, and in which there is usually a dilatation of the stomach. Gastrojejunostomy has given its best results in ulcer cases when pyloric obstruction is present. Some writers believe that the good results are due to the obstruction. This may be partially true, but it is also true that ulcers at the pylorus in these cases are usually less active, or even healed, with a consequent lowering of the acid secretion. Under normal conditions the acid chyme, as it leaves the stomach and passes into the duodenum, is neutralized by the pancreatic juice and bile. The pylorus alternately opens and closes until each separate amount of chyme has been neutralized. There is no such sphincteric control of the stoma in gastrojejunostomy, the escaping stomach contents being forced into the jejunum by the peristaltic action of the stomach. The acid chyme, on entering the duodenum, exerts its strongest action in producing secretion of pancreatic juice and bile. According to Pawlow, an acid solution acting on the wall of the jejunum also excites the secretion of the pancreatic juice and bile, but to a lesser degree.

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ETIOLOGY

Patterson is of the opinion that gastrojejunal ulcers are due to errors in the technique of the operation and that jejunal ulcers are the result of unneutralized acid chyme coming in contact with the walls of the jejunum. Nonabsorbable suture material has been found in a considerable percentage of cases of ulcers at the stoma and in a few cases of jejunal ulcer. Strands of thread have been found hanging from the anastomosis, in one instance 12 years after the operation (Sistrunk, mentioned by Judd). Permanent suture material for the outer suture is also just as liable to give trouble as when it is employed for the inner suture.

Dr. A. J. Ochsner emphasizes the importance of placing the anastomotic opening at the most dependable part of the stomach in order to prevent any pocket retaining the irritating acid gastric contents. Trauma due to clamps has produced ulcer of the duodenum in work on dogs (Ivy, of Chicago), but not much emphasis is placed on such trauma as being a cause of secondary ulcer in human beings, as these ulcers have developed in the jejunum at a distance from the place of application of the clamps.

Infection probably plays a considerable part in the etiology of these ulcers. This may or may not be due to infection from the ulcer for which the operation was performed but also to infection from the stomach, the appendix or the gall bladder. In 15 of the 101 cases reported by Judd no evidence of primary ulcer existed.

The removal of mucous membrane from the stomach, when performing a gastrojejunostomy, appears to be unnecessary and when this is done, especially with scissors, an uneven mucosal edge may result, which will prevent an exact apposition of it with the musoca of the jejunum, affording a place for leakage between the tissue layers and the possible beginning of an ulcer.

The fasting stomach should be examined and the motor and secretory functions studied. Many of these patients have not only a hyperacidity but also a hypersecretion or a continuous secretion of highly acid gastric juice. It is necessary for one to know these facts before the operation so that one may institute preoperative treatment. Similar treatment may be carried on after the operation. Then one has the data obtained both before and after the operation for comparison. It is not uncommon to obtain variable quantities of acid gastric secretion from the stomach of these cases twelve or sixteen hours after a meal. These are not cases of pyloric obstruction, although there is frequently a moderate swelling at the pylorus which aids in keeping up the continuous secretion. Some cases of gastrojejunal ulcer heal with the closure of the stoma. Not only is this true of gastrojejunal ulcer but it is also true in cases of cholecystoduodenostomy with closure of the anastomotic opening so that ulceration evidently occurs here.

G. B. Eusterman,[4] of the Mayo clinic (*Minn. Med.*, Nov., 1920, 3, No. 11), reported eighty-two cases. "Forty-seven followed gastroenterostomy performed in the Mayo clinic for benign gastric or duodenal ulcers. In thirty-six, primary operations were done elsewhere. The cause of this lesion is largely due to technical error or mechanical defeat in the operation itself. In one-third of all the cases retained unabsorbable suture material was a highly probable causative factor. The symptomatology closely approached that of the benign ulcer in eighty-seven per cent, which comprised the regular and the irregular ulcer types. Eighty-eight per cent of the patients, including those who had obtained incomplete or no relief, had a recurrence of symptoms within one year after the original operation. Late painful recurrence is frequently due to a gastrojejunal ulcer. Other possibilities to be ruled out are: reactivation of the partially healed original ulcer, new ulcer, and malignant degeneration in gastric ulcer. Clinical features of diagnostic importance are as follows: 1, gross gastric retention; 2, small movable mass in the region of the umbilicus; 3, postoperation pain assuming a lower level; 4, gastric colic fistula; 5, bleeding, gross or occult with associated anemia in absence of preoperative hemorrhage; and 6, a progressive course and a lack of satisfactory response to medical treatment.

"Exact preoperative localization of the ulcerative process is only possible through the coöperation of the roëntgenologist. This furnished reliable contributary evidence in 65 per cent of all cases. Careful operative technique, combined with immediate and continued postoperative medical management, should greatly reduce the incidence of the lesion. Medical participation, under any circumstance, in addition to the removal of the foci of infection, insures satisfactory surgical results. Operative procedures should have as their object the preservation so far as possible of the normal anatomic and physiologic relationship."

CLINICAL

Symptoms may have their onset immediately following the operation or there may be an interval of several months or even one year or more before evidence of a secondary ulcer becomes manifest. In not a few cases have these ulcers perforated acutely without any preliminary warning of their presence. Usually all symptoms are completely relieved following gastrojejunostomy and there may be a gradual return of symptoms which are frequently similar to the symptoms that existed prior to the operation. Pain is usually lower down in the abdomen and to the left of the umbilicus and behind the left rectus muscle. The relief of pain by food and alkalies is accomplished in some cases and in others but slightly or not at all affected. Hemorrhage from the stomach or bowel is not common with secondary ulcer but when it does occur it is quite suggestive of ulcer, more especially if it had not occurred before the first operation.

Wright reports 31 acute perforations in 135 cases of gastrojejunal ulcer, and says that perforation is more common following anterior gastroenterostomy than it is after posterior gastroenterostomy. Röentgen ray examination is usually necessary and is the most satisfactory method of establishing the diagnosis. However, fistula of the colon may or may not be determined by the röentgen ray (Judd).

Stitching the transverse mesocolon to the gastroenterostomy suture line while reinforcing the anastomosis also facilitates perforation of these ulcers, when they occur, into the transverse colon. In this way the ulceration extends into the mesocolon, which becomes thickened and shortened, thus involving the colon with ulceration and perforation. When the ulcer is in the jejunum the colon may come in contact with the ulcer and result in a colonic fistula. Bolton and Trotter[5] state that a trifle more than 10 per cent of jejunal ulcers become adherent to the colon and perforate into it. In recent years many surgeons have stitched the mesocolon to the stomach above the anastomosis. Fistula into the colon is accompanied by diarrhea, belching of foul smelling gas and the vomiting of fecal material. Emaciation is marked and rapid, as the food passes from the stomach into the large bowel in almost the same form as it was taken. The symptoms accompanying jejunocolic fistula may be intermittent according to the size of the communication.

DIAGNOSIS

The recurrence of symptoms following gastroenterostomy may be due to the reactivation of the primary ulcer or to the onset of a secondary ulcer. In most instances the symptoms are due to a secondary ulcer, and the pain and tenderness are lower down and to the left. The röentgen ray examination should confirm the diagnosis. In only two instances out of a number of cases reported by Lewisohn[6] did the röentgen ray fail to show the presence of the secondary ulcer.

TREATMENT

The reduction to a minimum of the occurrence of these secondary ulcers begins with the performance of gastroenterostomy and shows the necessity of a thorough examination of the stomach and its functions before operation. The greatest number of disappointments after gastroenterostomy are those cases in which gastroenterostomy was performed without any demonstrable lesion in the stomach or duodenum. There were 15 cases in the Judd series in which there was no evidence of a primary ulcer. Even when gastroenterostomy is performed for ulcer, other foci of infection such as a diseased gall bladder or appendix, etc., should be dealt with. Only unabsorbable suture material should be used in gastroenterostomy. A stoma of the proper size and location should be made. Trauma should be avoided and the edges of the mucous membrane, including all the coats of the stomach and bowel, should be nicely apposed with sutures. This should be followed by intelligent diatetic treatment, according to the chemistry of the gastric juice.

In the past little or no attention was directed toward the diet following operation. But plastic surgery for ulceration and deformities demands after-treatment. Here we have altered secretions, pathologic physiology, to begin with. Added to this there are the new anatomic and physiologic conditions following the necessary dealing with the existent pathology.

After a diagnosis has been made medical treatment should be used in an effort to obtain relief. Usually, however, these patients have to be operated upon. The plan that has been followed by the Mayos and others has been to undo the gastroenterostomy, excise the ulcer, close the opening in the stomach and intestine, excise the original ulcer if necessary and at the same time perform a plastic operation on the pylorus if it seems best. In some instances it is necessary to reëstablish the gastroenterostomy or make a new one, but if possible this should be avoided because more ulcers form in spite of all precautions. Operations for the closure of the fistula may be very difficult. If possible the colon should be separated from the jejunum and the opening in the colon closed. The stomach and the jejunum are then separated and the openings closed. In some cases a partial resection of the colon, jejunum and stomach has been necessary.

In conclusion, a gastroduodenostomy or a plastic operation on the pylorus should be performed if it is possible to do so. However, many cases require a gastroenterostomy and this operation will continue to be performed until we learn of a better method of cure for gastric and duodenal ulcer.

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SPECIFIC INSTRUCTIONS FOR PREVENTION OF RECURRENCE FOLLOWING GASTRO-ENTEROSTOMY*

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CHESTER

Inspired criticism is often prejudiced and nearly always illogical. The inspiration which has given rise to the extreme views voiced by internists and surgeons regarding the end results of their respective methods of treatment of gastric and duodenal ulcer appears to have had its origin in the abstract realms of thought and not to be based upon stubborn clinical facts. It is not my intention to add to the general medley but perhaps to strike another note in a slightly different key.

At a meeting of the American Gastroenterological Society in Washington, 85 to 90 per cent of 2,000 ulcers successfully treated surgically were contrasted with 85 to 90 per cent of ulcers successfully treated medically. The surgeons claimd that the greater proportion of their cases had been treated medically and symptomatically cured for a time before they finally submitted to operation; while on the other hand a counter-blast from the internists apparently proved that many cases supposed to have been cured by operation have a complete return of symptoms, requiring subsequent medical treatment.

The statistics as usual were useless in aiding the physician to decide upon the proper course of treatment. It would appear that the surgeons and internists are standing in their own light but there must certainly be a middle ground where they may both meet and not discriminate between either method of treatment. Both methods should be controlled so that one may round out the other. Medical stultification is not conducive to the best results.

No brief can be held for the internist who claims that the largest percentage of ulcers are completely cured by medicine and diet. If ulcers of the stomach and duodenum were recognized early and medical treatment instituted it would be a rare case indeed that required surgical treatment; but this seldom happens. Few ulcers give symptoms early enough to be recognized as ulcers. It is generally conceded that ulcers are mostly due to embolic infections from the tonsils, teeth, sinuses, appendix or other distant foci and before the ulcer is formed or in the early stage of ulcer, if the patient is fortunate enough to have a diagnosis made, proper treatment will effect a cure.

In a large proportion of cases the ulcer is chronic, its edges are calloused and indurated and to aim at cure with medical treatment alone will produce symptomatic relief only, with a return of activity later, not to mention the danger of perforation in 7 per cent, of carcinoma in gastric ulcers and of anemia from hemorrhage. It seems fallacious to believe that any physician would consider that such an ulcer can be cured by medical means. It is difficult enough to cure it by surgical removal, and the longer it remains unhealed, with resulting large amount of scar tissue, the less the possibility of complete excision.

These chronic cases with a cicatrical stenosis, permanent delayed emptying time and a flabby, ulcer-bearing stomach should undoubtedly be operated on, but they should be tyrannized over for the rest of their lives.

The late, painful recurrences which sometimes follow the operation are in a certain proportion of cases due to ulcers located in the vicinity of the stoma and developing six to twelve months after the operation.

Many theories have been advanced for the cause of these marginal ulcers. Wright,[1] in a comprehensive study, considers them due to the inability of the mucosa to withstand the irritant action of the gastric juice, the trauma produced by the operation being a predisposing factor. In 142 cases which he studied, 13 were due to the unabsorbable ligature.

Mayo,[2] Eusterman,[3] Moynihan,[4] Coffey[5] and others coincide with the view that unabsorbable suture material is the cause of these ulcers.

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Terry's[6] explanation that they are due to the irritation of acid in a part of the intestine unable to neutralize the chyme and the inflammation resulting from unabsorbable suture material appears logical. The number of marginal ulcers is generally conceded to run about 2 per cent, even where absorbable suture material is used, and I believe that intensive postoperative medical management while the mucosa is healing would greatly reduce this percentage.

A point of some diagnostic significance is that once established this type of ulcer is less amenable to treatment than other types. A mass is present in 12 per cent, hemorrhages in about 25 per cent, and the x-ray furnishes corroborative data in 25 per cent of cases, showing deformity of contour of the stoma, exaggerated peristalsis, gastroenterostomy not freely patent, barium retention and spasticity of the stomach.[3] Secondary operation is generally indicated and cures about 45 per cent of the cases.

A certain proportion of cases with subsequent recurrences are due to mechanical defects in the performance of the operation or due to the fact that the operation was performed in the absence of a definite lesion. In the Mayo clinic alone 400 gastroenterostomies have been undone.

Spur formation, evidenced by bile in the fasting stomach some time after the operation and caused by not applying the first suture exactly opposite the mesenteric attachment of the bowel, is a mechanical defect of no little importance.

A stoma which is too large will give rise to a condition known as "dumping stomach" and the diagnosis is made by the x-ray. Metbeth believes the opening should be large. Moynihan uses an opening 2½ inches in length.

Other technical errors are twisting of the jejunum, an opening which is too small, a loop of jejunum which is too long, hernia of the small intestines into the lesser peritoneal cavity and the direction of the jejunal loop, a point over which much difference of opinion has arisen. Moynihan states that it makes no difference whether the loop is directed to the right or left.

The fundamental theme of this paper, however, is not the importance in the operation of the technical defects which can and should be avoided, but to prevent recurrences in the class of cases where a technically perfect operation has been performed.

In the symptomatology probably the most frequent symptom the patient will complain of will be epigastric distress which will vary from discomfort after eating or before meals to fullness, pressure, weight, indigestion, burning sensation, gnawing sensation, pain, severe pain, and hunger pain.

Eusterman, from personal observation of many cases has drawn the following conclusions:

As soon as the immediate effects of the operation are over, the patient experiences relief from pain and associated symptoms, and his weight increases. This state of normal gastric function may continue without any special dietetic precautions. In a second group the patients may have periods of mild or severe gastric disturbances from six to twelve months after operation; then, without the use of any definite measures for relief, the symptoms subside permanently. The patients in a third group have a complete recurrence of their symptoms and routine reexamination fails to reveal a cause. The natural inference is that the ulcer is reactivated.

It has been thought for 40 years that the pain in ulcer was due to the corrosive action of the free hydrochloric acid. This theory was originally formulated by Cruveilhier, but recently much doubt has been thrown upon the validity of this explanation. Hertz, Barclay, Bolton, Cramer and Hamburger,[7] subscribe to a different interpretation of this pain. Their theory is that it is, in all probability, due to increased tension in the walls of the stomach from increased intragastric pressure. Hamburger[7] by a series of interesting experiments, proved that there was an increase in this pressure during the period of pain. I believe that the pain following operation is often due to an increase in intra-gastric pressure.

Alkalies relieve the pain by stopping the gastric spasms responsible for it and when combined with proper diet, removal of foci of infection and hygienic instructions, the percentage of patients with a complete return of symptoms following a well performed operation will be reduced more successfully than by pyloric resection or exclusion, removal of the ulcer or any of the intricate operations which have been described.

It is rather a commonplace to remark that excision of the ulcer should be performed, where possible, with careful union of coat to coat inclosing the opening, also resection of the stomach should be practiced where much induration is present and the ulcer is on the lesser curvature, as should circular resection with end to end anastomosis when the ulcer is large and to the left of the median lines on the lesser curvature.

In all the above operations gastroenterostomy is performed in addition and we should carefully outline a method of living which will prevent a return of symptoms. The patients should be told specifically just what articles of food they may eat during their convalescence, the proper use of alkalies, and instructions for use if pain returns in an aggravated form. The latter are always to be used under the direction of their family physician since pain may be due to some other condition not related to their original trouble.

If the physician to whom they are referred is intensely interested in this branch of medicine, he will probably secure better results by following his own initiative than with a standardized set of directions from the surgeon, and I have had cases treated by able internists in whom a complete cure was attained where I had failed, thus proving that standardization in medicine should not be a term too loosely applied and also the fallacy of the all too common practice of attempting to apply the calipers, the two-foot rule and the plumb line in general medicine.

Realizing only too well the dire results of over-standardization and the dominance of a philosophy in medicine which operates to minimize the functions and freedom of the family physician I, nevertheless, believe that most physicians are in need of a more or less standardized form of directions covering those methods of treatment which experience has proved will aid them so materially in the handling of these most difficult cases. Standardization is frequently successful if it is not reason-proof.

In beginning the after-treatment of any case which has been operated on for gastric or duodenal ulcer we should bear in mind that the management will narrow itself down to the treatment of the increased tone and peristalsis and the reduction of the free acid. How can this be accomplished? First, by dietary instructions, and second, by medicinal measures.

After much experimentation and many changes, I finally included on a card those articles of food which were found to be suitable at different periods of convalescence, the proper use of alkalies, the danger of oral sepsis, general hygienic directions and an outline of proper treatment (modified Sippy) in case of return of symptoms, to be given under the direction of the family physician.

As this card is handed to the patient when leaving the hospital, it of course, does not contain the diet for his stay in the hospital. The patient receives water in small quantities 12 hours after operation, weak tea, meat broth, thin gruel or milk, generally peptonized, after 24 or 48 hours, depending on his condition. He then receives a liquid diet for 10 days and soft boiled eggs, junket and custards. Well-cooked cereal and toast are gradually added until he leaves the hospital.

The diet on the card is then followed:

For Three Months.—Milk, cream toast, frozen butter balls, potato soup, cereals, mashed or baked potatoes, rice, jellies, junket, well-ground beef, chicken, squab, soft puddings and solf-boiled eggs. Eat small meals, but about six a day, taking milk and cream equal parts, with crackers or cereal between meals.

No salads, fresh fruits, fried food, rich food, condiments or spices, and, above all, do not overload stomach.

During Fourth Month.—You may gradually assume normal diet. Bread a day old may be substituted for toast. A small portion of tender, well-cooked lamb or fish (fresh-water perch, bass or pike, very fresh), also stewed apples, cherries, peaches, berries, as well as cooked asparagus tips, peas, string beans, ice cream, etc., may be slowly added.

For six months the food must be run through a food chopper, and a very good one is made by the Enterprise Manufacturing Company of Philadelphia, and is on sale at most hardware stores. This device, with its three wheels, will grind any kind of food. *Your stomach requires care during the rest of your life,* and you must live your life in a hygienic manner, keep your bowels regular, restrict your working hours if possible, exercise moderately, eat slowly, chew your food, have your teeth attended to by a good dentist at least every six months, smoke moderately if at all, abstain from alcoholic drinks and avoid fatigue. Take for six months 10 grains of sodium bicarbonate and 10 grains of calcined magnesia four times daily.

PAIN

If at any time you suffer severe pain in the stomach, consult your family physician, and the following treatment is advised if it is thought to be a return of your former trouble:

Take a teaspoonful of bismuth subnitrate in half a glass of water before breakfast every morning. Increase the powder containing sodium bicarbonate and calcined magnesia to every two hours and alternate with a powder containing 10 grains of bismuth subnitrate and 10 grains of sodium bicarbonate every two hours.

Take milk and cream, one ounce and a half of each, every hour during the day, and take a powder between each feeding. Continue this for four days, and then add a solf egg in the forenoon and one in the afternoon. Sixth day add three ounces of cereal, thus gradually increasing diet. End of second week, milk and cream every hour from 7 a. m. until 8 p. m. Two or three eggs and two or three feedings of cereal. The total bulk of any one feeding not to exceed six ounces. End of three weeks, crackers, milk toast, potato soup, jellies, eggs, and lengthen milk and cream to every two hours, and then every three hours. End of fourth week you may take the diet prescribed for the first three months, and lengthen your powders to every three hours, if you are free from pain and feeling well. During second month take the soda and magnesia powder alone, four times daily. Take bismuth subnitrate in the morning for six to eight weeks. Report your condition to me by letter every three months for two years, and then once yearly.

You must not consider yourself an invalid, and will probably enjoy better health than you have for years, but the above directions are given in order that a definite method of treatment will be outlined for you in case a return of your former trouble occurs through indiscretions of diet and habit.

Remember—That the treatment and prescriptions which are outlined for you, if you have pain, should be given under the direction of your family physician, since pain or other trouble may be due to disease of organs having no bearing on your former illness. Take this card to your physician if you require treatment.

If the course of treatment outlined does not relieve your symptoms report to me at once.

CONCLUSIONS

The prevention of recurrences following gastroenterostomy for ulcer of the stomach and duodenum depends not only upon a technically perfect operation but upon intensive postoperative medical management as well.

It is a great error for internists and surgeons to assume that nearly all ulcers may be cured by medical or surgical treatment alone.

The assumption may be interesting because of its originality but the originality is based upon pure assumption.

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DISCUSSION

ON PAPERS OF DRS. GILBRIDE AND ARMITAGE

Dr. Donald Guthrie (Sayre): There is nothing that I can add at all in discussing these two very excellent papers of Dr. Gilbride and Dr. Armitage, but I should like to emphasize a few of the points that they have made. The first is that gastrojejunal ulcer is comparatively a rare condition. The rôle that the nonabsorbable suture material plays in its production I am satisfied we are all agreed upon. My experience in this trouble is limited to operating upon but two cases, and in both I was able to find large strands of suture material on the margins of the ulcers. In regard to putting on the clamps, I think it is wise to only use enough pressure upon the stomach and jejunum with the clamps simply to hold them in position and not snap them up tightly until all hemorrhage is absolutely controlled.

I know of no other class of surgical patients (perhaps with one exception, and that is the exophthalmic goiter patient) in whom it is so important to follow out, as has been said in Dr. Armitage's paper, a long continued, constant, intelligent supervision by the medical man of the case after he leaves the surgeon's care. The ordinary chronic ulcer case after he returns home is an extremely rebellious patient. Nearly all jejunal ulcer patients will give histories of gross indiscretions in diet during the convalescent period. It is very hard indeed to control them in matters of diet, no matter how much we warn them nor how carefully we instruct them, because they have relief from pain and their appetites are ravenous.

There is one thing we do in our work immediately after operation: we wash the stomach out the second day following a gastroenterostomy and begin then with our alkalies. These alkalies are continued for at least six months following operation and the diet is restricted for a full year.

Dr. B. B. Vincent Lyon (Philadelphia): I should like to be permitted to say a few words in the discussion of these two papers, both of which have been extremely timely and interesting. In regard to Dr. Gilbride's paper, I think that some additional emphasis should be laid upon the *infectious* origin of marginal or gastrojejunal ulcers which follow the primary operation. Granting that you have your element of trauma from misplaced clamps or from nonabsorbable sutures, yet I feel that in the great majority of cases these things represent simple retarding influences in the healing of the lesion without themselves being the producing cause of the ulcers; for I believe that the great majority of ulcers are infectious in origin, or, more properly speaking, are produced as a result of infection. We should constantly remember that before any ulcer case is definitely taken up for treatment, *whether this treatment be medical or surgical,* an earnest attempt should be made to determine the etiological type of ulcer with which we have to deal. It would be very foolish to operate on a syphilitic gastric or duodenal ulcer and, withholding specific therapy, ignore the fact that the ulcer was being produced by lues. Similarly, there are other ulcers produced as a result of toxemia, such as those duodenal ulcers which occasionally follow third degree burns. Again, and most importantly, it is never wise to operate for ulcer of infectious origin and perform a gastroenterostomy, expecting to see your patient get well if you leave behind the primary focus of infection in pussy tonsils or a "dirty" septic mouth. It is often in this manner that your postoperative marginal ulcers are created.

I remember how forcibly this fact was brought home to me in two comparatively recent cases, one occurring in a prominent surgeon of this city. About six years ago he was operated for the relief of a duodenal ulcer on the posterior wall of the duodenum, which was causing partial obstruction. A gastroenterostomy alone was done. He made a poor response to surgery, and within a few months his symptoms reappeared, but of a slightly different type. They kept on progressing and finally took him back to the operator, who said there was nothing more to be done. He went to the Mayos and they corroborated the first surgeon's opinion. He continued to suffer with his ulcer symptoms, but during the war was ordered to France and was forced to eat chow that was perfectly good for any healthy individual, but bad for gastric ulcer. He continued to get worse, and on his return went to the Mayos, who then accepted him for operation. They found a marginal ulcer at the distal lip of the stoma. They closed the gastroenterostomy, did an end to end anastomosis of the jejunum, went back to the duodenum, found the original duodenal ulcer still unhealed, demobilized the duodenum and did a Finny pyloroplasty, and let him go. They, too, failed to hunt for, or at least failed to find, the primary focus which had produced both ulcers. He again made a stormy postoperative recovery and within a few months redeveloped the same type of post-meal hunger distress and pyrosis, but modified as to their time interval on account of the changed motility due to the rapid emptying of his stomach following the pyloroplasty.

At this point he came under my care and by tubing the man it was easily demonstrable that he had a hemolytic streptococcic infection in the duodenum and stomach. Where was it coming from? This meant careful search for focal factors of infection above the stomach. The teeth and gums were negative. His sinuses and bronchial tree gave no clues, and casual inspection of his pharynx and tonsils showed nothing visible on half a dozen examinations, except that the posterior pillars of the tonsil were bound down and the tonsil could not be pressed forward until the posterior pillars had been freed, when nearly a teaspoonful of pus welled out, foul and offensive, and containing pure cultures of hemolytic streptococci. Here then was the presumable source of all his trouble. The tonsils were removed and a vaccine prepared. It took a year to get this man back to health, during which time he had much topical disinfective treatment to his stomach and duodenum, coupled with general management and the use of his vaccine. His hemoglobin at its lowest point was down in the thirties, now it is in the nineties. His weight was forty pounds less than is normal. Now he is above his usual normal weight. His strength and efficiency in work were badly reduced. Now he is doing about ninety per cent of his work and getting away with it.

In the same way a similar analogy can be brought forward to explain simultaneous gastritis, duodenitis, with or without ulcer, and infective cholecystitis and appendicitis. I wish we could drive home the point more forcibly that the same infective agent can produce *multiple lesions,* coexistent in the gastro-intestinal tract. I believe that all of us, both surgeons and internists, are equally culpable in neglecting our search for the primary and all secondary focal points of infection. Why do we see so many postsurgical enterocolitis cases following cholecystectomies in which the gall ducts still remain infected?

I also want to call attention to the fact that pain thought to be due to hyperacidity and pylorospasm, a two- or three-hour post-meal pain, may not be due to hyperacidity, but may be found on testing to be due to hyperalkalinity. You will see this very frequently in your postgastroenterostomies if you follow your patients up. When the bile comes pouring in through the stoma and back into the stomach, if the gastric mucosa is inflamed and irritable, it will produce pain, and on fractional testing this pain will begin and increase in its severity as more and more bile is regurgitated through the stoma into the stomach. These cases will not be made better, and often worse, by soda bicarbonate or any other alkali. In that type of case I have found the greatest relief is obtained by the use of hydrochloric acid, plus morning and night lavage.

In regard to Dr. Armitage's paper, I think it is a most excellent one which will carry a good deal of weight if we take it to heart. We must learn that neither the doctor nor the surgeon can cure gastric ulcer or duodenal ulcer *in a few weeks' time,* and that the first thing in either management is to hunt for and remove all factors that either have produced the ulcer or retard its healing, and most particularly to eliminate the primary focal infection. Diet and medicine have a great field of usefulness, but I should like to ask you also not to omit to follow these cases up with topical and technical management as well. For instance, in certain cases of gastroenterostomy and its postoperative management, much of the pain produced is due to the causes that I have already spoken of; in others it may be due to a true hyperacidity, and the reflux of bile is nature's attempt to neutralize the hyperacid contents of the stomach. In both of these types part of the pain is caused by increased intragastric tension as a result of the hyperacidity or hyperalkalinization. In many such cases, in addition to lavage, great relief will be derived from lifting out of the stomach each morning, but more particularly just before retiring, the 100 to 300 or more mils of acid gastric juice or refluxed bile. This can be done by the patient himself with a duodenal tube and syringe. Patients do not find it difficult and especially after they learn the relief which it gives them.

Now one final word in regard to the use of antacids. I should like to refer you to articles published by Burrill Crohn from the Mount Sinai Hospital in New York, several years ago, which will show you how wrong we have been in our older views as to the administration of acids. You will find charts in those papers to show that if you give the average dose of sodium bicarbonate, let us say one-quarter to one-half teaspoonful half an hour after meals, this will very promptly neutralize the acidity and bring it down to the abscissa or base line, but within, as a rule, fifteen minutes later this will so stimulate the oxyntic or acid cells of the gastric mucosa that the acidity rebounds to a higher level than existed before the use of soda bicarbonate. Crohn found that certain salts of magnesia have a lesser neutralizing effect and not quite so prompt an action as soda, but that the acid rebound is not so high or so long sustained, and that bismuth possesses a still better action, being even less prompt in its neutralization but giving a far less acid rebound. Crohn points out the wisdom of combining our three common alkalis to take advantage of these principles. In our clinic at Jefferson Hospital we had been unconsciously making use of this plan before Crohn showed us the reason why we were getting better symptomatic results than by using larger doses. We write for a 1-2-4 powder mixture which contains two drams of soda bicarbonate, four drams of magnesia oxide and one ounce of subcarbonate of bismuth. For our clinic patients this is put in a box and the patient takes "dime doses" at thirty, sixty and ninety minutes after meals. This means he takes as much powder as will cover the top of a ten cent piece, which is roughly equivalent to a ten-grain capsule dose, and will therefore contain approximately 1½ grains of soda, 3 grains of magnesia and 6 grains of bismuth. You will find that by using this method of administration you will not only get increased symptomatic relief, but on following up your patient with repeated fractional gastric analyses you will reduce the height of your acid curve and bring it back to more nearly normal much better than you can accomplish by using the customary doses of soda bicarbonate.

Dr. George M. Dorrance (Philadelphia): Those who carefully follow up the cases of gastroenterostomy where it has been performed for duodenal ulcer find there is a certain percentage of cases, varying with the different operators, that develop jejunal ulcers. There is a percentage of cases who are not relieved of their duodenal ulcers and still a number that have a vague history of high intestinal obstruction after eating which is entirely relieved by lying down after eating. I have never been convinced that the gastroenterostomy was the operation of choice in chronic duodenal ulcer, for I could see no reason for making a secondary opening in the stomach when it is possible to enlarge the normal opening by dividing the pyloric muscle, thus preventing the duodenal spasm. The operation of choice in my hands is a Finney pyloroplasty. I have had a smaller percentage of disability or uncured cases since its adoption.

How is one to account for these patients with symptoms of high intestinal obstruction following a gastroenterostomy, which are relieved by lying down after eating? I have seen two cases, one at postmortem and one at secondary operation, both following gastroenterostomy, where there was marked dilatation of the duodenum caused by the first portion of the jejunum being drawn down by the stomach and causing an acute kinking at the duodenojejunal juncture. I do not believe it is possible, when performing a gastroenterostomy, to determine just where to do the anastomosis and just what portion of the jejunum to use, as the position varies from recumbent to standing posture and frequently a kink is produced which is relieved when the patient lies down.

From anatomic and physiological reasoning and from a careful study of the literature, I am convinced that if surgeons would do a pyloroplasty when indicated, there would be fewer of the late complications seen where a simple gastroenterostomy is done.

Dr. J. Quincy Thomas (Norristown): The papers of Drs. Gilbride and Armitage are very interesting from a surgical standpoint. I was greatly interested in both papers and especially in that of Dr. Armitage. The many failures of gastroenterostomy are due to too little instruction by the surgeon or internist looking toward prevention of a recurrence of the primary cause—ulcer. In other words, too little attention and time are given to advice regarding diet and mode of living, etc., after a gastroenterostomy.

My interest in this subject is more than common, for I can speak from experience. I have had a gastroenterostomy and have had about four years of experience with a perfect one, so I think I am well qualified to discuss this subject. I am very fortunate in being able to say that I have few symptoms, but I must adapt myself to practically a new mode of living and diet, to the condition brought about by the operation; so that anything which will contribute to the success or failure of this surgical procedure will be well received by me. That there are many failures no one can deny, and it is very important for all of us to do all we can for our patients so that they will have good results following operation. This operation is usually not performed for acute conditions, but for a condition in which the patient has suffered for years from all sorts of digestive symptoms. Then, to have an unsuccessful gastroenterostomy is most discouraging to both patient and doctor.

In reviewing the many causes of failure, we must remember that the physiology of digestion is very much disturbed by this operation. We have a very highly acid chyme, passing out of the stomach into the jejunum, which is normally alkaline, and this condition, which is brought about very suddenly by the operation, cannot but set up trouble until the bowel becomes accustomed to it. So, if we are to prevent disturbances, the character and amount of food is a very important consideration. Someone has said that it is necessary to take alkalies for six months after the operation. I wish to state that the taking of alkalies for one or two years thereafter is almost an essential, so as to neutralize this highly acid chyme. Surgeons have realized for a long time that many failures following gastroenterostomy have been due to lack of proper after-care, and are now giving their patients very strict orders and advice as to their mode of living, diet, etc.

Focal infections are the cause of many failures after this operation, and no gastroenterostomy should be performed without due care in removing all focal infections, particularly of the tonsils and teeth. My advice to anyone here having an ulcer is: 1st, look carefully for all focal infections; 2d, have your appendix removed; then try the medical cure. Be thorough and painstaking as is the competent surgeon in doing a gastroenterostomy. Then, if no permanent relief is obtained, consult a good surgeon.

A great many failures are due to poor surgery by incompetent surgeons. I do not know of another operation that requires more surgical skill. The ulcer should be excised and the appendix should always be removed if the patient's condition warrants it. If not, a secondary operation for the removal of the appendix should be done; for the appendix may be primarily responsible for bringing about the ulcer for which gastroenterostomy is done, and if not removed it may still be an offender and prevent a successful outcome to the operation.

It has always been very difficult for me to understand why surgeons did not do a Finney operation more frequently, for I think this operation does not interfere with the normal physiology of digestion.

Alkaline laxatives in hot milk before going to bed are valuable, combined with belladonna, to relieve spasm. This gives the alkaline a prolonged soothing effect on the mucous membrance of the jejunum.

Dr. Lyon's advice about giving hydrochloric acid following this operation is new to me. However, if a low acidity exists, it may be good to administer this acid, but usually we have to depend upon alkalies.

Dr. Gilbride (in closing): Dr. Thomas has had personal experience and he should know his own condition. He has emphasized the essential points. Speaking of having the appendix removed as a preventive for gastric or duodenal ulcer, I saw to-day a young man who now has a duodenal ulcer. I removed his appendix two years ago for acute appendicitis. However, this advice is most excellent, and by removing foci of infection we are more likely to have good results following any operation.

Pyloroplasty or gastroduodenostomy are the ideal physiologic procedures but these operations are limited in their application. Some years ago in the dissecting room I tried the Finney operation in a number of cadavers and found it difficult to follow out Finney's technic. We know that in dealing with extensive pathology about the pylorus something different is necessary. Three months ago I operated on a man who had an extensive mass at the pylorus. On opening the belly I found glandular involvement about the pylorus and in the gastrohepatic omentum. Owing to the size of the mass, glandular involvement, and adhesions, the condition was inoperable. An interesting point about this case was that he had lues with a plus four Wassermann combined with his cancer of the stomach.

Dr. Armitage (in closing): I have given bismuth, sodium bicarbonate and magnesia in the morning, at noon and at night, but in my experience, the best results are obtained clinically when the directions on the card are followed exactly as outlined.

I most emphatically disagree with Dr. Dorrance's statement that a pyloroplasty will not require the post-operative directions. Given the hypothesis that it is the preferable operation, I fail to grasp how a pyloroplasty can be performed without giving a raw healing surface with subsequent ulceration, unless the same painstaking care is used as regards medicine and diet during the healing period.

Flights of oratory or the measured tread of debate will not prove or disprove the value of the various methods of treatment, but the practical application of this card to the selected cases which I have mentioned has given very satisfactory results.

FAMILY SYPHILIS; ITS RELATION TO PUBLIC HEALTH*

ELMER HESS, M.D.

ERIE

Public health demands of the syphilographer as well as the family physician that family lues receive more attention. To salvage the luetic prostitute by law enforcement may be starting at the source but the innocent and conjugal luetic is far more dangerous to the public health. Our biggest mistake is to continue treating lues as an immoral disease of degradation. Most men who think will agree that eight per cent of the total population is more than a conservative estimate of the luetics in our midst, and by using this low figure, at least eight million people in America are known luetics. These eight million are not prostitutes but comprise also the hereditary and contact infections. How many more people have latent or active unrecognized lues as a result of family contact with the known luetic is a question of vital importance to the family and a definite public health question of no mean proportion. To treat the known luetic and leave his family unwarned and untreated is a big mistake, no matter what their position in the social scale.

These contact family cases often are in highly infectious stages of the disease, and innocent of their condition, infect those with whom they come in contact. Shall we tell some member of the family the truth or shall we as a profession sit back, treating only the individual who consults us?

A great many men when they are suspicious that lues is behind an iritis, a cardiac condition or some other remote pathology, merely exhibit antiluetic treatment without telling any member of the family the underlying cause. This is a mistake. It is more important in the private well-to-do case to tell the truth regardless of the hurt, as it is among this class we must do our missionary work.

Here is a child about eight years of age whose parents have an excellent social status, who for years has had many visible stigmata of congenital lues. The child recently has been seriously ill with a grave cardiac condition and the physician in charge has given antiluetic treatment with almost miraculous results. However an intelligent mother and father have been left in total ignorance of the underlying cause of the cardiac distress and the family as such is taking no more precautions than ever to protect any who may come in contact with either child or parents. Dangerous? Far more so than all the prostitutes in the world. As humanitarians, if not as scientists, we are in duty bound as a profession to give responsible members of families like the above the correct diagnosis.

One physician told me, he could see no use in treating people who had no symptoms and were perfectly well clinically, even if there was a strong suspicion of luetic infection in the family. This is dangerous advice because of the possible rebound. Some day these same people are going to be advised by some far-seeing physician of wisdom and they will always say, "Why didn't Doctor X. warn us, so that we and those we hold dear might have received protection?" In the long run it will pay to tell the diagnosis as you actually find it. You may lose an occasional patient but you will have done your duty.

This disease can only be controlled by careful education. This education must start in our own ranks. We must have some definite ideas concerning family lues and our advice must be along certain set lines. If this could be brought about, then the following case would to-day be receiving constant professional attention:

During the study of a woman aged 50, a diagnosis of cardiovascular-renal syphilis was made and mixed treatment instituted. The husband had died of tabes. Three children were living and two of them had always had some blood condition. The other child, a woman of 30, had always been healthy and well, but she had a first pregnancy miscarriage, and several years later gave birth to a living issue. This grandchild then at the age of three had two abdominal operations and T. B. glands were found in the mesentery. The child, now five years of age, showed certain stigmata of lues and I examined the blood of the entire family. The mother's blood Wassermann was negative, the child's three plus. I unhesitatingly made a diagnosis of family syphilis and frankly outlined my ideas of observation and treatment to the family, only to have my hours of explanation wasted by the remark of another physician, who found a single negative Wassermann a few days later, that, there was no reason to suspect lues either in the mother or child, as the blood examination was negative and they were not clinically sick. This case was of so much interest to me that I wrote to several prominent syphilographers to find what they would think of the diagnosis and the proper manner to handle this family, and they were unanimous in their opinion that the entire family was luetic and in absolute need not only of observation but of treatment.

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Lloyd Thompson said: "All three, grandmother, mother and child are luetic—entire family should undergo treatment."

Schamberg said: "The difference in the two Wassermanns is most striking, and of course the comparative reliability of the technique employed must be given consideration. In my opinion it would not be justifiable to allow the child to go untreated, unless further examinations definitely excluded syphilis. The best way to handle a family of this kind is to take the parent or responsible member of the family into one's confidence and thoroughly discuss the situation."

Edward Martin said: "I believe the diagnosis of lues in mother and child justifiable. It is reasonable to suppose the family is luetic and need observation and treatment. Negative Wassermann is of no diagnostic value in tertiary lues."

Mitchell said: "Lues most likely diagnosis. Observation absolutely indicated."

In this case the responsible member of the family had been told the probable diagnosis, the ultimate outcome if the condition was not eternally watched, and how that child could have been brought to a fairly useful adult life. The parent had been told that, particularly in tertiary lues, a negative Wassermann was secondary to family history and clinical symptoms; and then an honest, candid opinion, expressed by another physician who pins all his faith upon Wassermanns, in a few moments undid all the work of hours of careful study and diligent care. I am wondering if we pay enough attention as a profession to clinical signs and family history, any if many of us who are not particularly interested in syphilis *per se* are not too prone to pin absolute faith on the technician's report of a Wassermann?

Several years ago I was consulted by a man about 50, who had just returned from his vacation. He had clinically a typical case of typhoid but the Widal was negative. Several days later a palpable mass was discovered which was either the right kidney or an appendiceal abscess. The blood Wassermann was negative. Consultation advised an exploratory operation but the patient's brother rushed to my office and volunteered the information that I should dissolve the tumor with mercury. I gave the patient salvarsan at once and put off the exploratory, with the result that no operative procedure was done and the patient to-day is under antiluetic treatment with excellent results.

Where there is any doubt or any suspicion of lues and negative Wassermanns lend no further aid, there is still one test which is paramount in tertiary cases—the colloidal gold, and this test should be routine in all suspected cases. In my own work a positive colloidal gold is all I ask immediately to declare my patient luetic and to demand a still more careful contact and family history. Not that I do not believe in the Wassermann but that I do more earnestly believe in the colloidal gold, particularly in the tertiary stage, for it is more likely in this stage of the disease to find cerebrospinal contamination.

A female, single, aged 38, consulted me for indigestion. Family history was negative. Previous medical history was that several abortions and some pelvic operation had been performed several years previously. Her present trouble was confined to the upper half of the abdomen. Thorough study revealed cryptic tonsils, several bad teeth, a negative blood and spinal Wassermann, but a positive colloidal gold test. She was immediately given antiluetic treatment, has been under my observation for over a year, and to-day has returned to her former occupation as a saleslady without clinical symptoms. She is taking all the necessary precautions at home and so far there is nothing to suggest that she has become dangerous to her family.

Another case showing the value of colloidal gold tests follows: A male, aged 46, a banker, was referred by Dr. X. for cystoscopic examination. His chief complaint was a constant desire to void. Family history revealed a neurotic wife, two sisters-in-law who died of T. B., one sister-in-law insane. Wife's father died suddenly at about 50 years of age; mother O. K. Shortly after marriage the patient suddenly developed fainting attacks, followed by a complete nervous breakdown ten years ago. He made a tedious recovery, has been well ever since, worked daily until the present trouble started with his bladder. He complained principally of not wanting to do anything.

Examination showed a positive Rhomberg, cryptic tonsils, a few bad teeth, a negative blood and spinal Wassermann, a normal cell count (spinal) but a typical colloidal gold luetic curve.

Apprised of the diagnosis, he was asked to have his wife examined. She refused. He has been under treatment constantly since, with the most marked general improvement. The bladder difficulty has completely subsided.

In this case I had the complete confidence of the family physician, who is sneaking antiluetic treatment to the neurotic wife with the most marked diminution in her neurasthenia. In fact this patient would have absolutely refused to take further treatment when I made the diagnosis if it had not been for the excellent help received from the family physician, as they had absolutely refused to accept the diagnosis which was based solely upon the colloidal gold spinal fluid.

Family lues, or those cases innocently acquired through family contact, are likewise our great public burden. Here is the virgin soil for our preliminary work. The old hardened prostitute takes syphilis as all in a day's work, but the delicate wife and the hereditary luetic child are the real problems. The subject of syphilis is an extremely delicate matter when brought directly to the family. Because of the general view that lues is a venereal disease that can only be contracted by an immoral act, our ability to control the disease is going to depend entirely on our propaganda to the laity and our ability to convince the public that lues can in almost all instances be controlled, if not absolutely cured, and that there are almost as many cases of lues innocently acquired as immorally acquired. It is hard to convince patients that dyspnea, abdominal pains or frequent miscarriages may be the direct result of a luetic infection of which they previously knew nothing; and it is just as difficult to tell a man that a painless pimple acquired when sowing his "wild oats" is to-day responsible for his sickly children, and the more so if the wife happens to be apparently a perfect specimen of womanhood.

Another difficult thing to explain is why it is necessary to take expensive treatment when the family are all in apparent good health. Here is the great stumbling block to effective family care. Here is where the family physician, aided by the syphilographer, can hold his clientele and perform a distinct public health service.

The demand of state boards of licensure is to my mind the one greatest step in the control of syphilis that we now have, because by standardizing our hospitals we are demanding careful histories, and in no disease is the personal and family history of such vast importance. Many patients will lie when asked directly concerning a history of personal venereal infection but will willingly tell you of several miscarriages upon the wife's part, or that the father died of paresis or locomotor ataxia. Ofttimes this one bit of information will change a diagnosis of gastric ulcer to a gastric crisis and operation will be delayed until further study shows that antiluetic therapy is indicated and not the aseptic scalpel.

Is it sufficient to treat the patient and let the family go? No. The syphilographer must, however, absolutely depend upon the family physician to aid him, for without this aid the trouble is only doubled. Some men argue that it is better to let sleeping dogs lie, but if we ever expect to control the disease we will not do it by taking such a stand.

The law can be invoked against these people when it is a question of public health, but sensible coöperation of patients and their families will do more in one year than the law can in ten. If lues were only a disease that made people really sick in its early stages the problem again would be simplified, but the only way to get the disease by the throat is sensible education by the general practitioner, obtaining through him the coöperation and aid of the patient and his family. Then, if there is no coöperation after a fair explanation by the family physician and the syphilographer, the aid of the law should be invoked, and if there is no coöperation on the part of the general practitioner the law should likewise be invoked. This is just one of the things that will force state medicine and its evils upon us as a profession.

CONCLUSIONS AND SUMMARY

1. Conservative figures place eight per cent of the population in the luetic class, which means at least eight million luetics in the United States. This is a distinct public health problem.
2. Many more people must have unrecognized lues as a direct result of family contact.
3. Family lues when recognized is very often in the tertiary stage, during which time a negative Wassermann but a positive colloidal gold test is the rule.
4. Clinical signs are vastly more important than any known laboratory test.
5. Family history, if not as important as clinical signs is at least secondary to them and of more value than laboratory findings.
6. There is absolute necessity for coöperation between the family physician and the syphilographer in handling these families.

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DISCUSSION

Dr. Edward Martin (Harrisburg): In discussing Dr. Hess' paper, I shall so do, with your permission, from the public health standpoint.

He has sounded the keynote of control by insisting that this infection shall be regarded as are others; shall be frankly avowed; and shall be openly, systematically treated. This, with some exceptions, may be done if it be recognized, as it should be, that syphilis is a disease not necessarily implying moral dereliction.

Syphilis is probably the most controllable communicable diesase with which we have to deal. In its primary stage it may be rendered nontransmissible in a few hours; in its secondary stages, in a few days; in its late stages it is so feebly transmissible that it does not constitute a menace to public health, if heredity be excepted.

Incidentally, it is an occupational disease with doctors, who are exposed to infection in many ways and who generally believe that a primary lesion is always followed by a secondary; but who perish in their prime, of cardiovascular or nerve degeneration, without recollection of a lesion and without recognition of the fact that lesions of a syphilitic character, until their terminal stages, are readily amenable to treatment.

A study of control involves a knowledge of the large incidence of this infection—larger than tuberculosis and implying a greater mortality. The first step in control lies in prevention. The State Department of Health advocates the employment of "Immediate Treatment Packages," and our laboratory will give approval to such packages made by any drug firm, if they are nonirritating and efficient, as proven by test of samples from each set of tubes issued.

Thereafter, control lies in the arsenical and mercurial treatment of the primary lesion, which will render it nontransmissible within a day; which if repeated in course will prevent secondaries from developing; and which when begun early and carefully followed up will probably permanently cure many cases. Our clinics furnish the treatment free of charge.

Control is also dependent upon the early seeking (as each individual reports to our clinics and those working coöperatively with the department—over one hundred) of information bearing on the source of the infection, the finding of that source and rendering it nontransmissible. Finally, these patients are kept under observation and required to return for treatment, lest they develop recurrences which may be transmissible or deep lesions which may be crippling to themselves.

By the law of the state, syphilis is quarantinable when the character, occupation, or neglect of treatment of the individual infected endangers the public. The department has the power of either quarantining in a residence or removing to a place designated as proper for the restraint of such people. Moreover, this quarantine and distraint of liberty is possible providing there be a reasonable suspicion of such infection—this law applying particularly to prostitutes, the vast majority of whom are thus infected.

Concerning the treatment of syphilis: In the employment of arsenic and mercury, a dosage should be given, up to the tolerance of the patient. By tolerance is meant not all he can stand and live, but a dosage which increases his well-being, his appetite, vim, initiative, and go—which makes him feel better. Dosage beyond this does harm. The body weight and what is called "pep" are taken as indices, and during the course of mercury the urine is examined.

Twenty counties have provided places in which syphilitic menaces to health may be sequestered until they are no longer dangerous to the community.

TREATMENT AFTER OPERATION UPON THE STOMACH AND INTESTINES WHEN UNACCOMPANIED BY SERIOUS COMPLICATIONS*

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I take it as universally agreed that the treatment after operation upon the stomach and intestines is of importance equaling the technical skill required in the operation, because the many variations of detail in the digestive process, according to the structure and purpose of the different organs affected, make its essential features everywhere different, requiring special after-attention even when no complication arises.

As soon as the operation is completed after-treatment begins. The patient is transferred to a warm bed and placed upon the back, with head and shoulders slightly raised. If much blood has been lost during operation and symptoms of anemia are present, the foot of the bed should be raised so as to depress the head and shoulders of the patient. The greatest comfort is given a patient upon whom laparotomy has been performed by placing an air or water cushion under the hips. This, too, may prevent the occurrence of bed sores. Shock appears a formidable factor after operations upon the stomach and intestines more frequently than it does after other operations. It may occur immediately at the close of operation so that the patient recovers from the anesthetic very slowly. In other instances the patient recovers from the anesthetic, and symptoms of shock do not manifest themselves until later. Under the latter circumstances, hemorrhage or spreading peritonitis should be suspected. This is a most important distinction, since the treatment in the two conditions is widely different. A patient in collapse should be kept absolutely quiet, with head low, mental and physical fatigue should be avoided, cardiac activity stimulated by external heat, and pituitrin, strychnia, digitalin or camphor hypodermically administered. Normal saline solution, if much blood has been lost, may be used to advantage subcutaneously or intravenously. The fluid should be injected slowly until the pulse becomes passably good. If the injection is pushed beyond this point, the increased blood pressure may discharge a thrombus or cause an imperfectly applied ligature to slip.

The patient is kept in bed at least ten days. Every unnecessary movement of the trunk is avoided for the first three days. When desirable that it be moved earlier, this should be done by another—never by the patient's own exertion. Patients should not be allowed to get up in less than ten days, unless, as in the aged or those suffering from respiratory affection, their chronic affliction is made worse by the recumbent position. Under such circumstances it may be necessary to lift the patient to a chair in two or three days.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

If the operation has been extensive, the patient may be injured by too great haste in allowing a varied diet, for all the conditions of moisture, temperature, degrees of concentration and the like, requisite for the operation of normal digestion, are both physically and chemically seriously impaired. Hence, the rules for feeding must vary according to the extent of operation. It would be useless, for instance, to keep a patient upon a strict diet after merely an exploratory operation of either the stomach or intestines; but, in general, everything is withheld by mouth on the day of operation and that following unless thirst is very great (as it usually is if much blood has been lost), when the mouth is rinsed with cold water and spoonfuls of the same may be swallowed at not too frequent intervals. The main indication for treatment is the removal of all sources of irritation, so that the process of repair may be impeded as little as possible. Theoretically, this is best accomplished by giving to the stomach and intestines complete rest and by nourishing the patient by rectal alimentation. Practically, this method of administering food is attended with many difficulties, and moreover, the nutrition of the patient suffers by persistence in its employment. In most instances the patient can early be satisfactorily nourished by the stomach, by properly selected diet, without causing injurious irritation. All food should be withheld for three days. If vomiting persists and is blood-stained, feeding exclusively by the rectum must be resorted to.

Those articles of food are most suitable which call into action least vigorously the digestive secretions and the peristaltic movement of the stomach and intestines; which do not cause abnormal fermentations; which do not remain a long time in the stomach, and which do not mechanically irritate the tissues at the site of operation. These requirements are met only by a fluid diet, the most satisfactory of which is beef juice, peptonized milk, egg albumen and thin broths, any of which may be given on the third day. If fluid cannot be retained by the stomach, thirst may be relieved by rectal irrigation, or normal saline solution given intravenously or subcutaneously. Vomiting as the result of anesthesia usually ceases in twenty-four hours. When it does not and continues for two or more days, washing out the stomach will relieve pain, indigestion symptoms and vomiting, the patient experiencing thereby a sense of well-being; and, too, hypodermatic injections of small doses of morphin are found helpful, while bits of ice may be swallowed and an ice bag applied over the epigastric region. If vomiting continues longer than forty-eight hours some of the more serious complications, as secondary hemorrhage, gastric hemorrhage, ileus peritonitis, pneumonia or thrombus are suspected and must be sought for.

The practice of administering morphin routinely after operations upon the alimentary canal has numerous advocates at the present time, and when pain is great it seems at least a humane procedure, though I do not believe it always harmless. Aside from the relief of pain, any advantage gained by absence of peristalsis is more than outweighed by the disadvantage of the subsequent passage of hardened feces, increase in the formation of adhesions, diminished power of resorption of the peritoneum, and probably increased risk of septic infection; all of which are incident upon paralysis of peristalsis, for we know fewer adhesions are met with about abdominal organs which are freely movable. Whether morphin employed as above does good or harm, it must, however, in some instances be subcutaneously administered.

If gas does not pass *per anum* for two days and the patient is comfortable, no treatment is necessary. When longer delayed, and especially if the abdomen begins to distend, a rubber tube is passed into the rectum and kept there to advantage for several hours at a time. The alimentary canal should be thoroughly emptied before operation, and when this precaution is observed and only fluid diet given as above indicated, there is no necessity for the use of a cathartic earlier than the sixth day. If not opened at the expiration of this period, an enema is given. There is no advantage to be gained by forcing the bowel movement earlier than the fourth or fifth day if the stomach and intestines have been thoroughly emptied before operation. The claim that adhesions are prevented by early exciting peristalsis in this manner needs proof. A rigid asepsis will be found a more logical means of preventing adhesions and does not disturb the patient, though if beginning peritonitis or threatened intestinal paralysis be suspected, then early active catharsis, if perforation can be excluded, is a wise procedure.

When patients are unable to void urine for a period of twenty-four hours, the bladder should be emptied by a catheter—even earlier than this if the pressure of urine within the bladder causes discomfort. The cause of retention may be due to the position of patient or to the change in intra-abdominal pressure, or from reflex effect upon the bladder produced by operation.

The experiments of Chlumsky show that the strength of an intestinal suture diminishes up to the fourth or fifth day, and then gradually increases until by the eighth day it is usually perfectly strong. Then, too, it must be remembered that every suture line forms a sort of stenosis which disappears only with the lapse of time, and that perforation may take place many days after operation. Whatever may be the particular method of anatomosis, diet should be selected with care and so regulated for many weeks. Even when this rule is observed, the stomach is not empty but contains a considerable quantity of its own secretions, more or less blood, and frequently regurgitated bile and pancreatic juice, which, if they cause symptoms, should be drawn off through a stomach tube. This procedure is much less dangerous than the distention of the sutured stomach or severe vomiting.

General rules for diet are not easy to lay down, nor are they necessary, since the rules for each patient must be made according to circumstances, though the first fluid given should be of such a character that it cannot coagulate, such as water, shaven ice, egg albumen, tea and lemonade. Later the patient receives broth, junket, chocolate, coffee, egg and gruel. Solid food is allowed in eight or ten days, the first article being toast, mush, soft eggs, light meats and rolls. If such food is well borne, ordinary diet is given in about four weeks. If after two days the patient is unable to take and retain as much as two pints of fluid nourishment in twenty-four hours, nutrient enemata are given. This is the routine practice during the first days after the more severe operations upon the stomach and intestines. From five to eight ounces are injected at a time, the daily quantity being about two pints. Milk and water (1 to 2) with a little salt and 10 per cent of glucose make a good enema. Oatmeal gruel and peptonized milk are also serviceable.

If there is difficulty in retaining nutrient enemata, the quantity must be reduced and should be of a consistency never greater than gruel. A patient thus treated receives a hot bicarbonate of soda solution rectal irrigation every third morning.

The quantity and specific gravity of the twenty-four-hour urine are a good indication of the resorptive functioning of the rectum.

The diet after gastrostomy and jejunostomy should differ materially. In gastrostomy the gastric digestion is more or less preserved and the physiologic relations between the gastric juice on the one hand, and bile, pancreatic juice and intestinal juice on the other, enable the patient to get the good of his food. Furthermore, the stomach acts as a reservoir for the food, so that nutrition is provided for with a limited number of feedings. All these conditions are changed in jejunostomy. Here, since the intestinal juices are of secondary importance as digestive agents, being more of a lubricant than an active digestive secretion, it is found to be extremely difficult to maintain the health of the patient through an intestinal fistula; and the difficulty is increased in the presence of carcinoma of the stomach. This applies even more so in the large intestine. It is therefore not surprising that jejunostomy is less satisfactory than gastroenterostomy under similar conditions. After operation upon the lower bowel a fluid diet containing but little residue is given for about a week. Mikulicz's advice to employ, with great care, a cleansing enema eight days after suture of the lower bowel is well worth following. After intestinal suture, laxatives are given only when symptoms of paralysis appear. When a fecal fistula is established, the patient receives a regular diet three days after operation; and if the bowels do not move spontaneously within a reasonable time, he is given a laxative. No license is given to exceed an easily digested dietary such as tender beef, chicken, soft boiled eggs, farinaceous substances such as arrowroot, rice, corn starch, tapioca, etc., for at least two months.

DISCUSSION

Dr. Duncan L. Despard (Philadelphia): Dr. Hammond's paper is one that is full of interest. It is on a subject to which, perhaps, we do not pay enough attention. There are several points which seem to me well worth emphasizing.

A great many of our postoperative complications in gastro-intestinal surgery can be avoided or mitigated by preoperative care and preparation. The removal of decayed teeth and eradication of pyorrhea alveolaris, freeing the nasal passages of matter that may be solid, removing infected tonsils—these are matters that should be seen to in every operation of this type, as it will lessen the danger of reinfection of previously active ulcer or an infection of a stitch line, which might result in a perforation or marginal ulcer.

The administration of a laxative rather than a purgative forty-eight hours before the operation—or its omission entirely—will, I believe, often prevent postoperative distention. I think the former use of calomel was the cause of a great deal of postoperative discomfort. We all know that the administration of an active purgative lessens for a time the digestive functions, and I think many of our postoperative difficulties were caused by its use. Lavage of a stomach which has been unable to empty itself will remove material that may contain dangerous bacteria.

The administration of the anesthetic is another matter to which too little attention has been given. It is a matter of great importance. The less ether used the better. The quantity can be materially reduced by the administration of morphin and atrophin before the operation, and this will also lessen the volume of mucus secreted and swallowed. Primary anesthesia induced by the administration of ethyl chloride or nitrous oxide is another means by which the amount of ether may be reduced, thereby relieving the organs of excretion during the postoperative period and limiting the discomfort of the patient, or even preventing a kidney or cardiac failure or a postoperative pneumonia.

A tendency to continued vomiting after a gastroenterostomy may be relieved by placing the patient in a semi-sitting position, affording mechanical drainage of the stomach through the gastroenterostomic opening and thus emptying it of irritating material. Lavage under these conditions should not be resorted to except where other means have failed, although I have seen it practiced without serious results. The routine use of enteroclysis is an important factor in bringing to these patients relief from thirst and aiding in the elimination of the anesthetic.

I am not opposed to the moderate use of morphin where necessary to relieve pain or secure rest to an over-wrought or exhausted patient. I have not seen distention following its use that could be attributed to the morphin. What distention I have seen was attributable to an improperly prepared intestinal tract or to the administration of food too soon after operation.

The question of diet is, of course, an important one and in abdominal operations in general it has been my practice to withhold all food until the patient demands it, this being to my mind an indication that his digestive secretions are able to take care of it; but even then one must be guarded as to the kind and quantity given. I believe the practice of giving broth, milk, etc., the day following operation is much more often the cause of distention than the administration of the moderate dosage of morphin before operation.

In unhealed stomach or duodenal ulcer the possible cause of the ulcer should be considered in selecting the diet. Anyone who has witnessed the effect of withdrawing the carbohydrates from a case with a pancreatic fistula will realize what might be accomplished by giving those articles that require no hydrochloric acid in their stomach digestion. As a matter of fact it has been my practice to refer these patients to a gastroenterologist for their postoperative guidance with regard to diet, and I am satisfied that better and more permanent results have been obtained by so doing, such guidance being based upon knowledge of the primary cause of the ulcer, whether it be due to bacterial infection from teeth or tonsils, to infected biliary system, to toxins from burns, or to circulatory congestion. The secretion may be deficient or excessive, and the accurate determination of the true condition is the only sure guide to fixing a proper diet.

I cannot agree with Dr. Hammond as to the use of purgatives in threatened peritonitis. I believe it lowers the local resistance of the affected area and tends by increased peristalsis to disseminate the infection. The administration of mineral oil early after the operation has often obviated the necessity of more drastic measures, such as purgatives and enemas.

In conclusion, I wish to compliment Dr. Hammond on his presentation. I feel he has made a distinct addition to the literature on this important subject of postoperaitve procedure.

Dr. John J. Gilbride (Philadelphia): We listened this morning to Dr. Crile's excellent talk, and he told us we should begin our treatment prior to operation. This has been my practice for some time past. We know a great many cases of gastro-intestinal disease have been dieted for a considerable length of time, frequently on what might be called an unscientific diet; that is, they are given an unsuitable diet. To apply a diet properly it requires a knowledge of the functions of the gastro-intestinal tract in that particular case. We must adapt the diet to the chemistry as well as to the motility of the stomach. Therefore, it is essential that one should study the functions of the stomach first. For example, cases having an excess of hydrochloric acid secretion do not tolerate the carbohydrates very well. When there is an absence of hydrochloric acid one should limit the proteids, as the patient would do better on carbohydrates. These are the principles on which the diet should be applied. Many patients have been kept on a starvation diet. Not a few patients could be made better operative risks by more preliminary study on the part of the physician. Cases of malignant disease of the stomach, for example, can usually be greatly improved by forced feeding with milk, eggs and liquids for a few days, or longer if necessary, before operation. In some instances patients can tolerate an absence of food better than they can an absence of liquid—water.

I am not optimistic about rectal feeding. It has been well understood for some time that not much is accomplished by rectal feeding. The colon can absorb a great deal of water, and that is about all, but this is of immense value in sustaining the patient.

Gould told us some time ago that the suture line in gastroenterostomy is water-tight in nine to ten hours or thereabouts. However, if it is not necessary to give food by the mouth early one may delay its administration for a short time, as the patient's thirst may be relieved by enteroclysis. Feeding patients both before and after operation is of superlative importance in successful surgery.

THE PRESENT STATUS OF THE RADICAL MASTOID OPERATION*

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The first recorded opening of the mastoid cells was done by Johannes Riolanus in 1649, but the first *bona fide* mastoid operation was performed by von Trölsch in 1858, and reported in 1861. In the same year Lawrence Turnbull, of Philadelphia, performed the first mastoid operation done in America. During the interval, attempts at the surgical relief of aural disease were made, in which the success attained was more accidental than scientific, perhaps, but each effort was a step in advance toward the perfected mastoid operation which could be relied upon to effect a cure.

Von Trölsch's remarks anent the dangers of confined pus within unyielding osseous walls are as pertinent now as then. In his paper of 1861, referred to above, he says: "One of the fundamental principles of surgery, which is slowly gaining ground in internal medicine as well, demands that every retention of pus in the tissues should be given exit as quickly and as thoroughly as possible, by the doing of which alone can be avoided gravitation abscesses, extension of the inflammation, and the injurious action of the same on the neighboring parts. The principle is to be the more emphasized and brought the more conscientiously into application according to the importance of the tissue and the place in which such suppurations occur. I know of scarcely a part in the human organism which, in all directions, is so surrounded by important parts and organs, and in which accumulations of pus should be so carefully avoided, as is the case with the middle ear." This statement of principles may be called the corner stone of the edifice of modern aural surgery.

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In 1868, Jacoby, of Breslau, the first to open the mastoid cells by means of a drill, divided his operative aural suppuration cases into two classes: one in which the cortex was obviously involved, and the second class showing little or no cortical disease. Modern otology supports Jacoby's classification and emphasizes the folly and danger of waiting for signs of carious erosion of the cortex before resorting to the relief that surgery offers.

Jacoby was the first to advocate opening the mastoid for the relief of chronic otorrhea. In the succeeding decade various methods were devised for the relief of surgical mastoiditis, notably by St. John Roosa and Orne Green, until Schwartze, influenced by his unsatisfactory results, definitely advised against opening the mastoid unless as a last resort to save life.

The first definite suggestion of what subsequently became known as the radical mastoid operation is credited to Küster, in 1889. He expounded the theory that the rational treatment of chronic middle-ear suppuration must be based on the surgical principle that a diseased bony cavity should be freely opened, all necrotic tissue removed, and the source of the suppuration brought clearly to light. Only when this is done are the surgical requirements fulfilled. Hence he proposed chiseling away the posterior wall of the meatus, making one cavity that should be comparatively easy of access of the external auditory canal, the middle ear, and the mastoid antrum and cells.

Stacke, supporting Küster's theory and replying to severe criticisms of von Bergmann, in the same year, says: "Otology is an off-shoot of surgery, and only in close adherence to it and in the true and conscientious observance of its principles is success to be sought for and to be found. * * * The most important principle is the establishment of free, unhindered, spontaneous drainage. Incomplete drainage, and, as a consequence, further and deeper bone disease, is the cause of the difficulty in the healing of middle-ear suppuration."

In 1891 Stacke described his new method of opening the mastoid for the relief of chronic suppuration. With various modifications, the Stacke operation is the one in almost universal use to-day.

Chronic tympanic suppuration produces changes in the mucosa lining the mastoid antrum and cells, and subsequently the underlying osseous structure. These pathologic changes are governed largely by the character of the anatomical structure of the temporal bone. If the mastoid cells are of the diploic or pneumatic type, they usually become filled with granulation tissue, epithelial debris, and inspissated pus, which accumulate in sufficient quantity to cause pressure and erosion and thereby absorption of the bone, thus frequently exposing the sinus and dura and causing the cavity, more particularly the antrum, to become abnormally large. On the other hand, if the process is of the sclerotic or eburnated type, it slowly becomes filled with hard, ivory-like bone, due to the histologic changes through which the granulation tissue and other debris pass, which in turn obliterates the lower cells more or less completely and causes a gradual decrease in the size of the antrum. It is noticeable that in this latter variety the sigmoid sinus is frequently found far forward and very superficial, even occupying, in some instances, the greater part of the mastoid antrum.

In some of these cases, on account of the pathologic changes, the sinus is crowded so far forward that the posterior osseous wall of the external auditory canal acts as the anterior and supporting wall of the sinus, and when this happens it is evident that the usual method of performing a radical mastoid operation would be very difficult, if not impossible, the original Stacke method, under such circumstances, being the selection of necessity rather than choice.

When the absorption of bone is extensive, more particularly if this process is aggravated by cholesteatomata, various fistulæ develop, one of the serious complications being exposure of the labyrinth through the external semicircular canal. Another complication of equal import, but not so vital, is the erosion of the fallopian canal carrying the tympanic branch of the facial nerve, thereby producing Bell's palsy, a condition abhorrent to all operators, whether responsible or not.

Probably many of my hearers have seen cases of chronic suppurative otitis media with mastoid involvement in which the greater part of the superior and posterior osseous wall has been eradicated by carious erosion and absorption, thus showing nature's effort to relieve a dangerous pathologic state within the mastoid process which had long been neglected. Some of these cases result in a spontaneous cure, thus justifying in a very obvious way surgical intervention towards the same end.

In the presence of cholesteatomatous accumulation I have seen the bone absorption so great that only a thickened membrane separated the sigmoid sinus or dura mater from this mass. Surely such a dangerous condition should not be permitted to develop when means are at hand to prevent it.

There are two distinct types of chronic mastoiditis. The first is that in which the discharge is constant, although it may be very scanty and often escape the notice of the patient. The other is recurrent in type and is manifested by an acute exacerbation of the chronic condition. It is quite likely, in this class of case, that the discharge does actually cease for a period. This latter variety is by far the more dangerous, owing to the fact that the majority of our complications, intracranial and otherwise, are sequelæ of this recurrent form. Every aural surgeon is often confronted with a definite statement that an aural discharge does not and never has existed, when an examination reveals not only some discharge, it may be even of a foul-smelling character, but some granulation tissue, perhaps, and a more or less complete destruction of the drumhead and caries of the ossicles. This condition is so frequently found in patients seeking relief from a gradual impairment of hearing that when accompanied by headache and perhaps slight fever it is a danger sign which should not be overlooked.

Formerly it was most difficult to tell definitely when surgical intervention was called for, owing to the fact that necrotic changes incident to chronic mastoiditis frequently give no symptoms that would warrant operation. Notwithstanding the erosion may have been sufficient to destroy the mastoid cells, causing a perisinus abscess; the roof of the tegmen antri or tympani may have been absorbed, producing an extradural or even an intradural abscess; the ossicles and membrana tympani may be somewhat or wholly destroyed; various parts of the internal ear may be involved, even causing the expulsion of various sequestra or exfoliation of the cochlea—any or all of these serious pathologic changes may be present without producing notable symptoms for the time being. Even the development of Bell's palsy, in the absence of other symptoms, is not always sufficient to direct attention to the underlying cause.

It is evident that we should devise ways and means of detecting such changes in their incipiency, from the fact that an acute exacerbation under such circumstances many times means the ushering in of intracranial complications, with all the dangers appertaining thereto. Fortunately, in recent years we have had the aid of roentgenography, which, although not absolutely final in its conclusions, nevertheless is of the greatest aid when interpreted by an expert.

Whether the discharge be copious or scanty, continuous or interrupted, we should utilize every facility at our command to determine the presence of caries and necrosis. After the tympanic cavity has been thoroughly dried of all secretion, cotton on an applicator will frequently adhere to exposed bone. The probe is also valuable in detecting such bone, as is manifest by a sensation of roughness or even, when loosened, a certain amount of mobility. A sequestrum is sometimes accidentally detached by this means.

The character of the discharge is also an aid in this connection. When the secretion is bloody or blood-streaked, it is a definite indication of the presence of granulation tissue or a polypoid growth. If these recur after removal, this is conclusive evidence that they arise from diseased bone. Should they spring from a circumscribed sequestrum and the latter is removed, a spontaneous cure results. An offensive odor may not always be the result of osseous involvement, but a persistent yellowish-brown, foul-smelling pus is, I believe, an unfailing sign of bone necrosis. The presence of cholesteatomatous masses in the tympanic cavity, and more particularly protruding through the aditus, is a dependable diagnostic sign of mastoid disease that requires operation for its relief.

As is well known, chronic mastoiditis may continue for many years without exhibiting serious symptoms, or even giving sufficient inconvenience to attract attention. Only when an acute exacerbation occurs, giving signs and symptoms of acute mastoiditis, or possibly those of one of the several intracranial complications, are patients, and frequently their medical advisers, aroused to an appreciation of the gravity of a neglected otorrhea. Even attacks of a feeling of heaviness in the head, dizziness, tinnitus aurium, headache and neuralgic pain are not attributed to the temporary obstruction of the discharge, but are frequently regarded as the result of biliousness or other general ailment. These symptoms are danger signals, demanding expert care, especially when accompanied by a rise of temperature, even though slight. An acute exacerbation of a chronic mastoiditis is far more serious than a primary inflammation of the process, owing to the fact that the sclerotic type of mastoid frequently is encountered, which usually prevents the characteristic symptoms of mastoiditis. The inflammation, in such cases, will follow the line of least resistance and be directed internally instead of externally.

It is manifestly impossible to state arbitrarily the indications for the complete or radical mastoid operation. Each case must be judged on its own merits, after the pros and cons have been thoroughly considered and weighed, and furthermore, after every reasonable effort has been made to correct the condition by nonsurgical means, being careful, when possible, to intervene before serious complications develop.

It is evident, therefore, that we have two objects in view when we consider the advisability of performing a radical mastoid operation. The first may be considered a prophylactic measure, and in this connection we have the greatest difficulty at times in persuading ourselves to advise the operation, from the fact that these patients do not present urgent symptoms. The second object is the relief of some manifest, and perhaps urgent, pathologic state. In this type of case it is not difficult to arrive at a decision.

Generally speaking, if the discharge has continued over a period of a year or more, and has resisted careful and persistent treatment, conservatism would seem to be served by advising a mastoid operation in order to prevent the possibility of future intracranial complications. It develops that in some of these apparently mild forms of chronic mastoiditis we find a foul-smelling discharge, epithelial debris, and granulation tissue in the mastoid process, and this is the type of disease where suddenly, out of a clear sky, one is stricken with symptoms of an intracranial lesion. It will be seen from this that the condition of the tympanic cavity and external auditory canal is not always an index of the pathologic state within the mastoid process.

A state as described above does not necessarily mean that a radical operation must be performed in all cases. For instance, if the hearing is fair and the process contains only nonoffensive pus, without noticeable osseous changes, it is quite likely that the simple, or Schwartze, operation would be sufficient, or at the most the modified radical or so-called Heath could be employed. If, on the other hand, deafness is very marked, together with an impaired bone conduction, and there is present granulation tissue, epithelial debris, cholesteatomatous masses, and caries, nothing but a radical operation should be considered.

As above stated, it is impossible to determine the preoperative status of the mastoid process in all cases, so that in advising an operation the extent of the procedure can only be determined after the mastoid has been opened.

If granulation tissue and polypoid growths repeatedly recur and the otorrhea does not cease after ossiculectomy, a radical operation is indicated. Ossiculectomy will be serviceable only when the suppurative disease is confined to the tympanic cavity. The radical mastoid operation should be performed if there are symptoms of retention of pus secondary to increased bony formation, such as exostosis or hyperostosis of the external auditory canal. The recurrence of other symptoms, such as headache, nausea and vertigo, is also a danger signal, in the presence of a chronic otorrhea, that calls for operative intervention. As stated, the presence of cholesteatomatous masses demands complete eradication of the mastoid process. The development of various fistulæ, above mentioned, is also an indication, although it is not wise uniformly to explore through these fistulæ, in the absence of symptoms, if they involve the internal ear.

Operation is also indicated when a Bell's palsy develops in the course of a chronic otorrhea. This may be the result of inflammation along the fallopian canal to the internal ear or the facial canal. Intracranial lesions develop by contiguity from the primary otitic focus. The first step, therefore, for the relief of these conditions is the performance of the radical mastoid operation.

It is not the function of this paper to describe the technic of the radical mastoid operation, and yet I wish to make a few pertinent statements in regard to it. In the earlier days, on account of lack of accurate anatomical knowledge and defective technic, the inflammatory products were not removed *in toto*, which gave very unsatisfactory results. The operation was gradually perfected until we became entirely too thorough, even going to the extent of polishing the osseous structures by means of burrs, etc., which had the effect of devitalizing the bony cavity to a certain extent and thereby retarding, and in some cases preventing, normal reconstruction. Latterly we have assumed a middle course, and although we insist on removing all bone actually diseased, we have learned that bleeding and hyperemic bone is not necessarily pathologic in a reparative sense, but on the contrary, actually promotes the repair of the operative field.

Great care must be exercised to avoid certain dangers incident to this procedure, the principal one being facial palsy. An examination of the fallopian canal carrying the tympanic branch of the facial, as demonstrated by Cheatle, Jansen, and others, shows that the nerve has a very definite course in most instances, but deviations are noteworthy. It is quite reasonable to assume that in the development of Bell's palsy following surgery of the mastoid, the operator may be responsible. To show that he is not always at fault, however, an aurist has only to recall his own experiences and note the cases of otitic Bell's palsy on which no operation at all had been performed. To illustrate this point, I may mention two cases that occurred in my own practice, as related in a paper read before the Southern Medical Association, in November of 1919, in each of which a mastoid operation had been under consideration for several weeks, and was delayed because of the absence of symptoms, from the patient's viewpoint, to warrant surgical interference. In each instance I had arranged to operate the day before the palsy developed, but enforced absence from the city made a postponement necessary, the Bell's palsy appearing during the night. I mention these cases to give emphasis to the fact that this palsy would no doubt have appeared just the same had the operation been performed as originally planned, in which event the operator would rather naturally have held himself responsible for the occurrence.

In regard to the modified, or so-called Heath operation, it is only fair to state that this operation was first performed by Jansen, of Berlin, and some years later was taken up by Heath and no doubt somewhat perfected. In selected cases the operation is serviceable in curing a discharge and improving hearing, and yet my own feeling is that this operation is warranted only in those cases where there is no disease of the ossicles or attic, and that, furthermore, the simple mastoid operation would act just as efficiently. In the presence of disease of the ossicles and attic region, it would seem unsurgical to leave them, for the disease may continue, or, if arrested, adhesions will bind down the ossicles, producing greater deafness, perhaps, than if they had been removed.

Skin grafting is used by some operators with the idea of shortening the process of repair. This was first introduced by Thiersch, who transplanted small pieces of skin taken from the arm or leg two or three weeks after the mastoid operation. This procedure fell into disrepute for some time, but still later on was reintroduced by Ballance, who transplanted two or three large pieces of skin, covering the entire cavity, opening the incision about the tenth day, first carefully curetting away the granulation tissue and drying the surface of the cavity. Still later, primary skin grafting was practiced and is carried out at present most successfully in the hands of Dench. Many operators, including myself, employed both secondary and primary skin grafting for a time, but abandoned it on account of our lack of success, owing, perhaps, to our faulty technic. The value of skin grafting is still under discussion and it would seem to me to have its limitations.

It is difficult to state what the average time is for complete repair following a radical mastoid operation, owing to our very incomplete records in this respect, but I have seen some cases completely recovered at the end of three months. The fact that a slight discharge may continue has no bearing whatever on the efficacy of the surgical procedure in inhibiting intracranial complications. A discharge of this type may keep up for some time; it usually comes from the eustachian tube, and is not an indication that the operation has been unskilfully performed.

According to our records, about seventy-two per cent of the ward cases operated upon are cured of the otorrhea, with a ninety-five or better percentage of cure in the private cases. The effect of this procedure on the hearing power will depend largely on whether the internal ear is involved prior to the operation, and the condition of the tympanic wall following it. Under ordinary circumstances the hearing should not be materially changed one way or the other. If the round or oval window is injured during the operation, the hearing will, of course, be considerably lessened. It must be assumed, in this connection, that the auditory function may be slowly involved, following the radical mastoid operation, just as this process may continue without the operation. My belief is, however, that after the removal of the pathologic products from the tympanic cavity and mastoid region, the progress of impairment of hearing is considerably lessened rather than enhanced.

The preservation of hearing, or even its improvement, as well as the cessation of discharge, will depend primarily on the operative technic, and secondly (and this is really vitally important) on the after-care. Experience has shown that when patients leave the hospital (this is particularly true of ward patients) and place themselves in the hands of someone unaccustomed to care for postoperative cases of this type, the discharge is almost interminable and the loss of hearing may be even rapid; hence it is very desirable that we should personally direct the aftertreatment when possible.

If before operation there is evidence of internal ear involvement, the patient should be told that an operation will not improve the hearing. On the other hand, if the internal ear is not materially involved and the tympanic cavity is filled up with granulation tissue and other inflammatory debris, the hearing may be materially impaired by their removal. This actually happens very often.

There is one phase of chronic aural disease to which I wish especially to call attention, for the oftener I am confronted with a bilateral chronic suppurative otitis media in young children, the more I am in doubt, at times, as to what is the best procedure. In the first place, we are very reluctant to advise a radical mastoid operation on young children. In case both ears are involved, the question arises as to which ear should be operated upon first, and in any event are we justified in operating on both ears? In order to solve this question we should determine, if possible (and in young children this is at times most difficult), whether the internal ear is involved on one side or both, and also whether one ear gives additional indications for operation. If this can be determined definitely, then the ear in which the internal involvement is discovered should be the one selected for operation, consideration of the other ear being deferred until the operated ear recovers itself, enabling us to ascertain the amount of hearing remaining in this ear. This will also give us an opportunity to try for a longer period to cure the second ear without operation.

DISCUSSION

Dr. George W. Mackenzie (Philadelphia): After reading Dr. MacCuen Smith's paper several days ago it occurred to me that the subject and the manner in which he presents it is timely for the otologist, but more particularly for the general practitioner to whom these patients first go for relief and upon whose advice they place so much dependence.

I wish to endorse Dr. Smith's admonition that it is foolish and dangerous to postpone operation upon the mastoid until caseous erosion occurs in the outer cortex, with resulting subperiosteal abscess and the typical textbook picture. There has been too much waiting in the past. Pus in a confined bony cavity will eventually find an exit in the line of least resistance, and the direction is only too often toward the inner ear or intracranial cavity.

Concerning the more radical treatment of chronic middle ear suppuration, the essayist wisely advises thorough removal of all dead bone, granulations and cholesteatomatous masses, etc., carefully avoiding vital obstructions except when they are already involved in the disease process. It may be recalled that in those cases where fatalities occur in spite of operation, the operator failed to go far enough rather than too far. This fact was pointed out to Politzer and his staff a decade or more ago by Weischselbaum and his pathologists to whom the fatal cases from the Politzer clinic found their way.

Before attempting an operation upon the temporal bone it is essential that the operator possess the most comprehensive knowledge, not only of the conditions existing within the middle ear and mastoid spaces, but also of the adjacent structures, in order to be prepared to operate accordingly. In other words, whenever a case presents itself with history and findings indicating a radical mastoid operation, the surgeon should, before operating, subject the patient to a most exhaustive examination with the object of determining as near as it is possible to do so in advance, the exact condition of the inner ear (acoustic and vestibular), the meninges, the sinus, and the brain tissue itself. As a rule we do not go far enough. In making our examinations we should include everything that may have a bearing on the case.

In a case with a history of vertigo it is most important to know the exact condition of the labyrinth before attempting an operation on the mastoid. If the vertigo is the result of congestion of the labyrinth, a mastoid operation is generally sufficient to cause an abatement of the inner ear congestion. If, on the other hand, it is due to a destructive labyrinthitis, it is essential to drain the labyrinth at the time of the radical mastoid. The only fatalities I have witnessed from labyrinth suppuration were in those cases where the labyrinth suppuration escaped detection before operation and the operator was satisfied with cleaning out the mastoid and middle ear spaces, a practice to be avoided.

Doctor Smith's paper is worthy of more discussion than time will permit. Not the least important phase of this branch of surgery, as well as of other branches, is the matter of exact diagnosis, for upon this alone is one able to approach the operation with a clear understanding of what ought to be done and what ought not to be done.

Dr. Harvey M. Becker (Sunbury): One thing I have in mind about the cause of Bell's palsy is the use of the Stacke protector. We cannot forget what our old friend, Dr. Ballenger, said in his book, when speaking of this instrument: "It is very likely to defeat the very purpose for which it was invented."

Several years ago I was operating on a patient, an interne acting as assistant, and I told him to hold the protector perfectly still and not move it under any circumstances; yet when I turned to pick up another instrument from the operating table he broke the bridge under which it had been inserted, and we had a Bell's palsy. I assume this must have been responsible for the palsy, because inspection before we cut down failed to reveal any exposure of the facial nerve. Whether the palsy was entirely due to faulty technique is a question in my mind. I believe the necrosis going on in the bone covering the facial nerve, and about the fallopian canal might have as much to do with the degenerative process in the nerve as sinus disease does with the optic nerve.

Some claim they can cure acute or subacute mastoiditis in children with vaccines. Some claim cures with the x-ray, but I have not heard of any proof that they have had cures. My feeling is that all this is dangerous progaganda. Any mastoid with broken-down trabeculæ cannot reconstruct itself and cannot be said to be cured. Only after a competent x-ray can this claim be established, and as only a few men are competent to use the x-ray in mastoid work, even this examination may leave us in some doubt.

When you get a history that back in childhood the patient had a middle ear abscess that had subsided and had not been heard of since, you may be pretty sure why the patient is deaf. He is probably deaf for the reason that there has been an uncured mastoid that had much better been operated in childhood. I fear this procrastination is dangerous propaganda.

Dr. Samuel Cohen (Philadelphia): I should like to ask Dr. Smith if he still does the ossiculotomy operation, and if so, when?

I am glad that Dr. Mackenzie called attention to the value of the Bárány tests prior to operations on the mastoid. When, however, he speaks of doing the Neumann operation, it seems to me that I should be rather slow in undertaking such a formidable operation, because of the almost unavoidable facial palsy that follows this procedure, the narrow, deep space one has to work in, and the almost ivory hardness of the bone. My work in reference to this operation has been limited to the cadaver, where having done a fair number of both the Neumann and Hinsberg, I prefer the simpler of the two, which is the Hinsberg. I should like to ask Dr. Mackenzie whether he does not prefer the Hinsberg to the Neumann operation.

Dr. George W. Mackenzie (Philadelphia): Up to a few years ago the mortality statistics showed a smaller mortality for the Neumann than for the Hinsberg operation. The Neumann operation, which is a most comprehensive one, includes the removal of the posterior wall of the petrous bone almost to the internal auditory canal; also the groove. The Hinsberg is a more incomplete operation. The risk of facial palsy is greater in the Neumann operation than in the Hinsberg, but I should take that risk rather than try an incomplete operation.

Dr. Smith (in closing): I quite agree with all that Dr. Mackenzie says in regard to the Bárány test. This brings up one more point, however, and that is the advisability of making a lumbar puncture, with examination of the fluid, in all cases of chronic suppurative otitis media before operation. It has been pretty well established that after operation some patients will rapidly go into a meningeal state and die. In such instances the meningitis was preoperative and in all probability could have been discovered by examination of the cerebrospinal fluid.

Mention of Bell's palsy emphasizes the fact that when competent operators meet with this condition we are justified in believing that they are not necessarily responsible, owing to the fact that the fallopian canal carrying the tympanic branch of the facial may not have run its usual course, or, what is still more likely, carious erosion may have exposed the nerve sufficiently to cause the Bell's palsy, even though an operation had not been attempted, as has been shown in two cases that I have personally seen.

In regard to the Stacke protector, I do not use it. I never did but once, and that was on a cadaver. I am sure that if I had had a living subject I should have had a Bell's palsy.

I have been asked about the number of cases that recover. I read a paper before the American "Triological" Society about eight years ago in which I showed that about 70 per cent of radical mastoid cases get well. You will have a larger percentage in your private patients. The great trouble is that after ward cases are operated and get rid of some of the symptoms, many of them do not care about the discharge and are therefore neglected. In your private practice you can control this much better and get a better percentage.

There is one point I want to emphasize. The simple fact that you have a discharge continuing after a radical mastoid does not in any sense negative the good results of your operation. You have prevented intracranial complications by doing a radical mastoid. If you have a discharge it probably comes from the tube, and personally I have not made any attempt to close the tube in the last two years. I have let the tube alone, and I believe that my results are just as good, or better, than when I made every attempt to cause a stricture, with a view of sealing off communication with the pharynx. Sometimes the more you attempt to close the tube the less you accomplish.

THE IMPORTANCE OF NURSING SLOWLY*

MAURICE OSTHEIMER, M.D.
PHILADELPHIA

During the past twenty years, in our daily work in the Children's Dispensary at the University Hospital, one fact stands out above all others: that apparently a physician rarely, or perhaps even never, instructs a young mother to nurse her baby slowly. As a class, the obstetrician seems but little interested in the babies born in the maternity department of a hospital, if he be interested at all. These infants are usually left wholly in the hands and at the mercy of the nurses; and you know how rare it is for the average nurse in training to know anything at all about teaching a baby to nurse slowly. No one who uses his eyes, however, can fail to notice what a "pig" each new-born baby is. Though he remain so fast asleep for some days after birth that he cares neither for water nor for milk, some few days later the time arrives when he is so hungry that he will gulp down his food if permitted to do so. This habit, unchecked as it so often is, soon leads to colic; and later on, if still allowed, leads to more and more colic, resulting in various degrees of indigestion and sometimes in malnutrition also.

Secondly, this same habit may be observed among bottle-fed infants. These babies often seem so ravenous that they appear to try to swallow nipple and bottle, in their eagerness to nurse rapidly.

Thirdly, even those babies who have once learned to nurse slowly may relapse into fast nursing again, whether breast-fed or bottle-fed, unless they are carefully watched and rapid nursing constantly prevented.

Finally, there are babies who have been weaned for no other reason at all than that they nurse too fast; and other babies whose formulæ have been changed again and again, simply because, as the mother so well puts it, "nothing seems to agree with my baby!"

These types of babies are observed every afternoon in our dispensary; and the large number of infants whose indigestion seems to depend upon nothing but nursing too fast amazes the physicians in attendance. My ward classes for four year medical students have frequently demonstrated this fact during the past twenty years. These men have not failed to be impressed by the prompt recovery which follows simply teaching the mother how to make her baby nurse slowly.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

The treatment of this condition is simple enough if it only be recognized. All that is necessary is to teach every baby always and only to nurse slowly. This can be accomplished easily: either the mother pinches the nipple at regular intervals, which is often difficult; or, what is far better, the mother withdraws the nipple from the baby's mouth regularly, from time to time, after each mouthful taken, giving the baby time to breathe, cry or rest. Then nursing is again permitted, only long enough for one mouthful to be taken; then another rest; then another mouthful, etc. When this has been continued for about one week, regularly and consistently, at each nursing, and later on whenever a tendency to nurse too fast is again observed, all symptoms rapidly disappear, whether the baby be breast-fed or bottle-fed.

We beg to call to your notice the importance of these facts, because of the constantly increasing number of babies seen each week who have been weaned or whose formulæ have been changed time after time, for no other reason than that they nursed too rapidly!

A few moments' thought given to the manner in which the baby is permitted to nurse will soon show you what really causes the indigestion. No change of food will result in recovery if all food is taken so rapidly that symptoms, such as pain, flatulence, colic, vomiting, etc., always result, and always result immediately!

Therefore, gentlemen, we plead with you to be sure that all the babies under your care are taught to nurse slowly. You will then be assured of far better results than can ever be achieved by frequent changes of food, or by any change at all in the constituents of the baby's mixture.

DISCUSSION

Dr. Percival J. Eaton (Pittsburgh): This paper of Dr. Ostheimer's, although a brief one, has opened up a broad field for discussion. I think all who have had much to do with the nursing of bottle-fed babies understand what he means, and we also understand perfectly well how little nurses and mothers know about these things. Among the points which we are privileged to teach are many of the things which the nurses are ordinarily not trained to know, and which they should be taught, and this particular thing is very important. It is also extremely important to teach the mothers the reasons for the suggestions which we make.

Some years ago in the *American Journal of the Diseases of Children,* someone, whose name I cannot at this moment recall, wrote an article on the amount of air found in the baby's stomach, and illustrated it by x-ray plates. We had taught our mothers that there was air in the stomach in varying amounts, and also told them that it was a law of physics that you could not have two things in the same place at the same time, and if you had much air in the stomach you could not have a sufficient quantity of milk. Rapid nursing, either from the breast or from the bottle, certainly allows a great deal of air to go into the stomach, and sometimes it stays there with discomfort to the child. Breast nursing should be slow as well as bottle nursing. That pinching of the mother's nipple is not a particularly easy thing for the mother to do, but it is easy for a mother to run her finger down her breast toward the nipple and the baby will then relax its hold and lose the nipple.

Now in regard to bottle feeding, there are two or three things which Dr. Ostheimer suggested, and perhaps a very important one is this suggestion relating to position. When the baby is being fed by the bottle it should be held on the mother's left arm, the neck of the bottle should always be full of milk, and the bottle should be removed from the baby's mouth for a couple of seconds every ten to twenty seconds. Pediatricians know that the breast is an elastic organ, and that as the milk is withdrawn, the breast contracts. A bottle cannot contract. "Kissing" the bottle means that the child is sucking so hard that it is pulling in air, filling the saliva with bubbles which are swallowed. That can be obviated by removing the bottle from the baby's mouth every few seconds.

Another point is that each bottle should have two nipples, one with several small holes and another with perhaps more holes of the same size, because, as you all know, any child who is very hungry is eager for its food, and if the holes are large, it will swallow milk, air, everything, simply "gobbling." The types of children which do this are not in any way extraordinary. I think all normal, healthy children are apt to do the same thing—eat their meals too fast.

Dr. Ostheimer's pleas for time, for care, in the matter of nursing both the bottle-fed and breast-fed baby are most timely, and we are indebted to him for his suggestions.

Dr. Lida Stewart Cogill (Philadelphia): I again bring in the obstetrical note. If we are to train the mother to release the nipple from the baby's mouth at stated intervals, then we will have to begin a régime in training these mothers to have their hands sterilized before the baby is put to the breast, because in these first two weeks the danger of infection of nipples by the contamination of the finger from the lochial discharge is going to be great. We have the problem of the sore nipple; we are trying to keep the nipples as sterile as possible, and while the baby should nurse slowly, I still see that it is going to bring in another problem in the education of our mothers.

Dr. H. Brooker Mills (Philadelphia): In reference to the baby being on the mother's lap when taking the bottle, I think this is unwise at any time. I prefer that the baby should be in the location and position it is going to occupy after the feeding is over, i. e., its crib, or coach, or elsewhere. One reason for this is that I do not think it should be in contact with the warmth of the mother's body while taking its food, and another reason is that, after the feeding is over, the mother has to get up with the baby to put it in a place for sleeping, some of the results of which moving will likely be to awaken the baby, if asleep, or to make it vomit. One might also mention the objection that mothers frequently rock the baby while it is feeding, which, of course, is very objectionable.

Dr. Ostheimer (in closing): I thank you for the discussion. What Dr. Cogill said interested me most, because the mother, while still in the hospital, should be taught to have clean hands. If she is taught to keep her hands clean before she leaves the hospital, she may continue to keep her hands clean afterward. Of course, the breast might be taken from the baby at regular intervals during her stay in the hospital, but I think you could accomplish something by teaching her to keep her hands clean before leaving the hospital.

What Dr. Mills said was also interesting. I feel that it is wise to get the baby up after each nursing, especially the baby who takes too much. The baby has a more restful time afterward, if it has been lifted up once or twice before going to sleep. Most babies have more or less gas to come up, and they are certainly helped if you let them get it up before they settle down.

Dr. Eaton (in closing): In reference to Dr. Mills' statement in regard to the position of the baby, I feel that the baby should be on the mother's left arm and not in the lap. If the feeding is done in the crib or on the bed, nine times out of ten the mother will stick the bottle up on a towel and let the baby get it as it can.

SELECTIONS

X-RAY AND RADIUM IN SUPERFICIAL LESIONS*

BYRON H. JACKSON, M.D.

SCRANTON

The x-ray as a therapeutic agent has been thoroughly tried and its field of usefulness definitely outlined. When the x-ray was first used and before its action was understood, much damage was done. But, when its dangers were recognized and its actions more thoroughly understood, it became not only a very useful but a very harmless therapeutic agent. Any remedy may be harmful when not properly understood.

Radium does not differ materially from the x-ray. It is not a new agent. It is radiant energy in another form than the x-ray and one having all the properties of the x-ray. Many physicians hesitate to recommend this agent, feeling that it is a sort of last resort. Radium has this advantage over x-rays: it can be applied directly to the tissues. It can be applied in situations not otherwise accessible: the cervix and body of the uterus, within the nostril, ear, rectum, vagina, mouth, esophagus, etc.

There are three kinds of rays emitted from radium: alpha, beta and gamma.

Alpha rays are corpuscular in character (particles or electrons), having 1/10 the velocity of light carrying positive charges of electricity. These rays are very soft in character and may be screened by a sheet of writing paper.

Beta rays, corpuscular in character, negatively charged, have a velocity nearly equal to light. The penetrating power is 100 times greater than the alpha rays. These rays have little if any power to penetrate the skin. On the skin they have a decided caustic effect and, therefore, possess valuable therapeutic properties. They have to be carefully screened by lead when deeper tissues are treated.

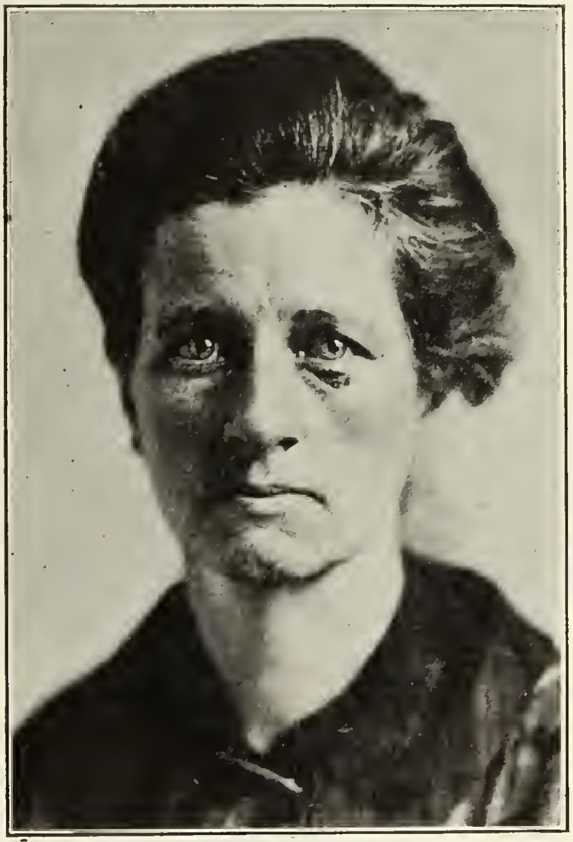

Fig. 1.—Epithelioma of Lower Eyelid.

Gamma rays, the most penetrating, are not corpuscular in nature, but consist of electromagnetic disturbances similar to ordinary light waves. These waves have the same velocity as light and cannot be screened except by very heavy lead screens. There is no essential difference between gamma rays, x-rays and ordinary light. They all belong to a class of electromagnetic waves. The length of the gamma rays is much shorter than light or x-rays. By virtue of the short wave lengths, the gamma rays possess greater penetrating power than x-rays.

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*Read before the Luzerne County Medical Society December 7, 1921.

Gamma rays of radium do not differ materially from the x-ray and their therapeutic applications are the same as the x-ray. The x-ray has been used for a number of years and has been so thoroughly tried that we now know what conditions can be benefited by it, and what diseases can be cured.

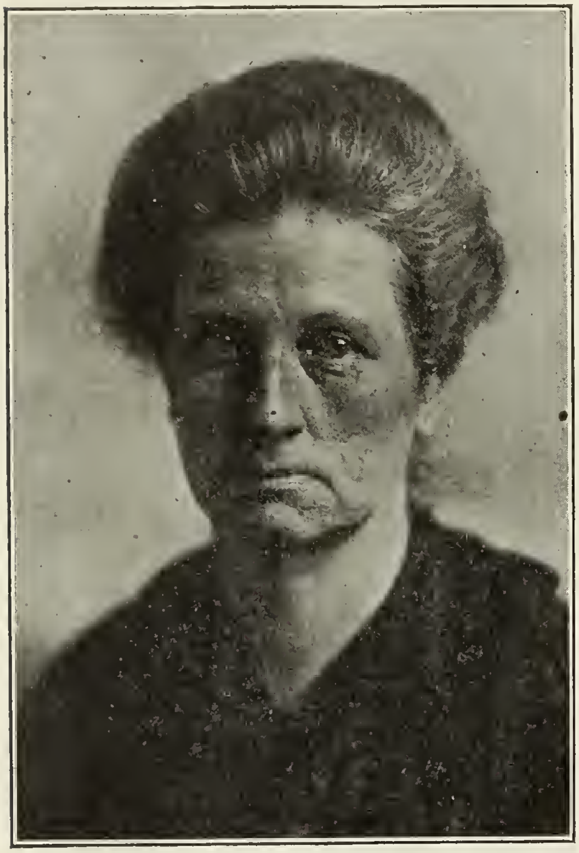

Fig. 2.—Case Shown in Fig 1, Well Two Years.

While, it has been shown that ultra-violet rays cannot be deflected from a straight line (according to Einstein, however, this theory is not absolutely correct) it is also a fact that these rays, when passing through substances, produce secondary or scattered rays. The harder the primary ray, the greater the secondary radiation. That secondary radiations are produced when the primary light passes through the body has been definitely proven. The shorter the primary rays, the greater the secondary radiation.

The beneficial effect of radiation is due to the rays which are absorbed by the tissues. Therefore, it can be seen from the foregoing that the softer rays should be used for the more superficial lesions. For the deeper lesion the longer (softer) rays should be screened out by suitable metalic substances. It is well to remember however, that even though the softer rays are screened out by metal, rays may be produced secondarily from the metal screen. Therefore, these screens are usually covered by a layer of rubber.

The view now accepted as regards the action of the rays of radium, is that it is not the gamma rays which act directly in causing changes in the cells, but rather the secondary rays (similar to beta rays) which are set up in the tissue by the absorbed gamma rays (secondary radiation).

The field of radium therapy is already very large and rapidly increasing. Radium, however, will never replace roentgen rays as a therapeutic agent, nor will roentgen rays replace radium. Radium may be used alone or in combination with roentgen rays, depending upon the lesion we are treating. Many times a combination is preferable.

The following remarks are confined entirely to radium and to lesions which are best treated with this agent.

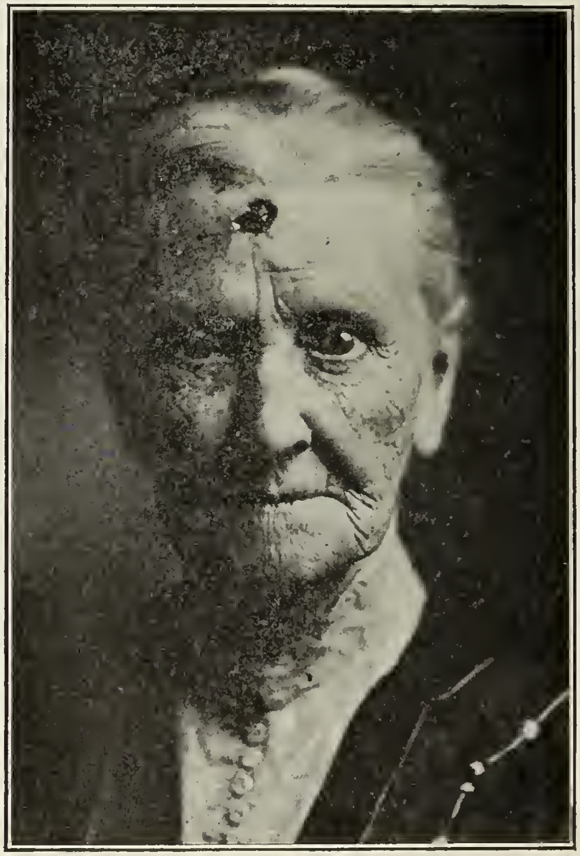

Fig. 3.—Epithelioma of Forehead.

CANCER

The object of any treatment is to destroy every malignant cell. If this can be accomplished, a cure is the result. In many cases this object is most nearly attained by irradiation. The great disadvantage of excision is the difficulty of removing all the pathological tissue. This is especially true in deep-seated, adherent lesions or lesions that are situated in inaccessible locations such, for instance, as the inner canthus. Even when dealing with a small epithelioma limited entirely to the skin and situated in a favorable location, the surgeon, in an endeavor to obtain a good cosmetic result and for other reasons, is likely to cut too close to the macroscopical lesion, thereby leaving malignant cells behind. Quite frequently the pathologist finds the proliferated epithelial cells extending to the edge of the excised tissue. By using radium, shock to old and feeble persons is avoided, as well as loss of time, pain and deformity.

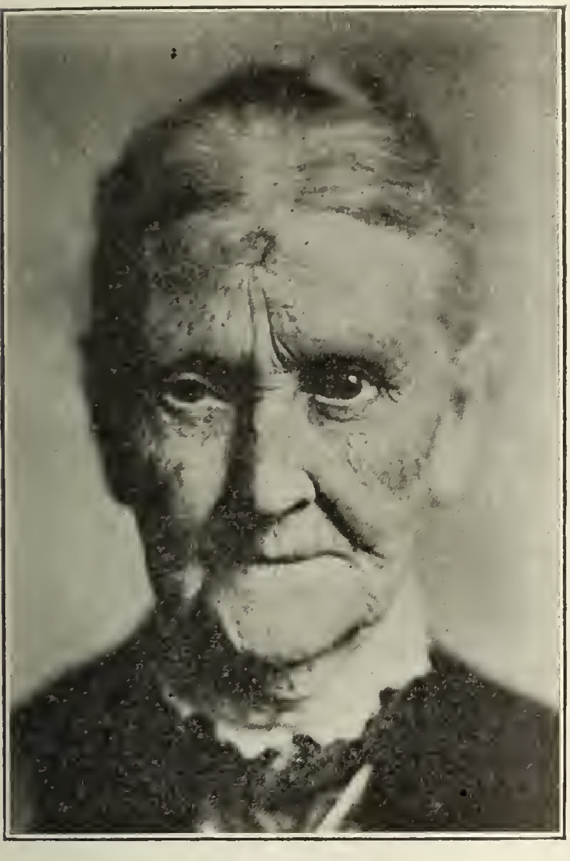

Fig. 4.—Case Shown in Fig. 3, Well One Year Later.

When treating epithelioma, even a small basal-cell growth, the principal object is completely to destroy the disease. While, cosmetic results are worthy of consideration, they are of secondary importance. It is the duty of the physician to select a method of treatment that in his opinion will most likely eradicate the disease. If there is a method that will accomplish this purpose and at the same time give a superior cosmetic result, such treatment should constitute the method of election. Small lesions can be destroyed with x-rays or radium and the cosmetic result is so perfect that it is impossible to detect the former site of the disease. Excision always leaves more or less scarring. Cancers involving the entire skin or subcutaneous tissue (which have formed a crater) will leave a depressed scar no matter how treated, but the deformity is less following irradiation than with any other form of treatment. In treating basal-cell epithelioma, it is well to remember that irradiation should be carried to the extent of "killing." A treatment may only stimulate the growth to greater activity if the amount of radium and the time applied are not sufficient to destroy the malignant cells.

NONMALIGNANT DISEASES

Keratosis, precancerous lesions, corns, warts, papillomata and keratomata: The majority of these lesions can generally be removed by one exposure of one to one and a half hours' duration, according to the size and thickness of the growth, with "full strength" applications unscreened.

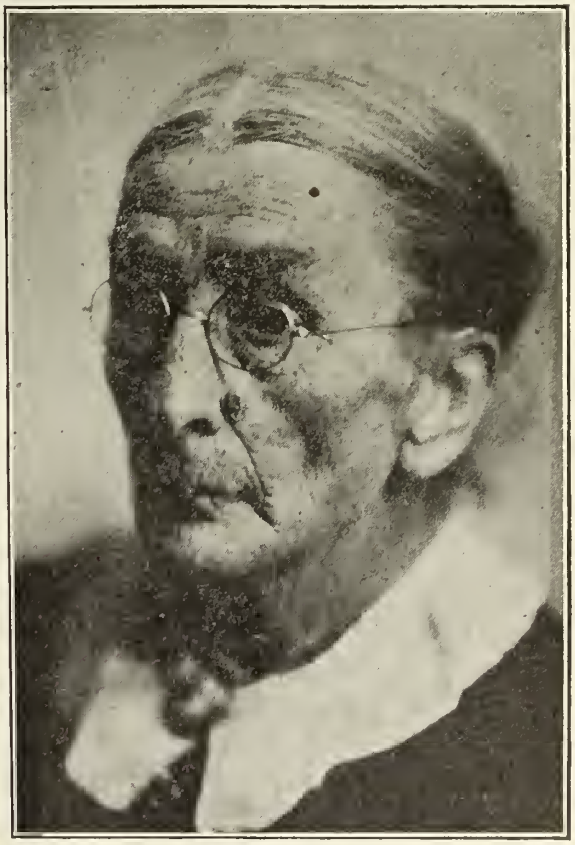

Fig. 5.—Epithelioma at Ala of Nose.

Keloids: Radiation is the treatment par excellence for the removal of keloids. Probably the best proof of this is the fact that several keloids which have been cured were those produced by the surgical trauma incident to the removal of the original keloid. The lesion not only becomes smooth and level with the surrounding skin, but its smaller blood vessels are destroyed so that the color becomes normal. The x-ray has long been used for this purpose and some very satisfactory results have been obtained by it.

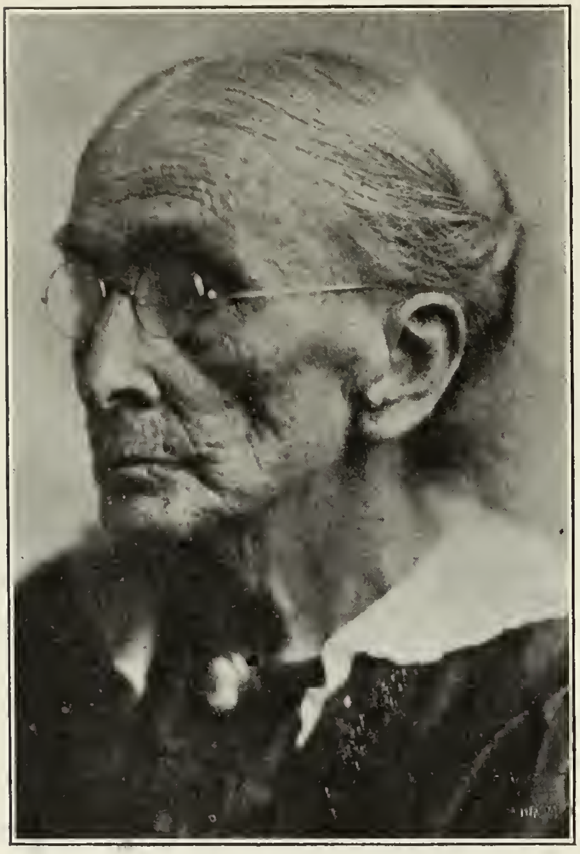

Fig. 6.—Case Shown in Fig. 5, Well One Year Later.

Vascular Nevi: The elevated types of *nævus vasculosus* (strawberry marks) yield very readily to radium. Cavernous nevi may be destroyed by repeated careful dosage. The port wine marks being fully developed at birth, and therefore consisting of mature cells, do not yield as those of the embryonic type. The types that respond well to treatment are those which begin soon after birth and grow gradually for several weeks or months. In these cases, there is an increase in the number of the blood vessels which are not only dialated but which continue to develop by budding. This being a new growth, its cells are more or less embryonic in character, and therefore are more readily destroyed. In these cases, radium has entirely displaced surgery, since not only the color is removed, but also the vascular, boggy tissue is contracted to nearly normal and many of these cases do not leave any trace of the original growth.

Lingua Nigre (Black tongue): We have had one case of lingua nigre, black tongue, covered with small black hairs. One application of radium entirely cured this.

Metastatic Nodules from Carcinoma of the Breast: Radium is one of our most useful agents in the treatment of palpable recurrent or metastatic nodules from carcinoma of the breast. Two of our cases are entirely cured for over a year. Several others are now under treatment.

Lupus Vulgaris (Ulcerative Type): Lupus vulgaris was one of the first diseases treated by radiation, and when first treated it was thought that roentgen rays were a specific, but later developments proved that this was not the case. The fact remains, nevertheless, that radium and roentgen rays are the best two therapeutic measures which we have for this disease. Radium is to be preferred, especially when the lesion is in an inaccessible locality.

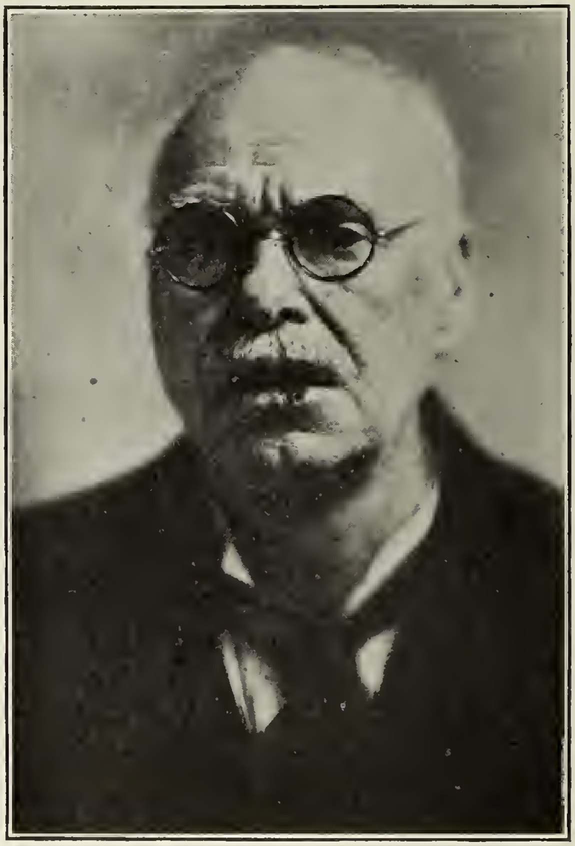

Fig. 7.—Epithelioma of Lower Lip; Advanced Diabetes.

In order to emphasize more clearly certain cases in which treatment by radium has distinct advantages over surgery I am appending several photographs.

Figure 1 shows an epithelioma of the lower eyelid. This is a situation especially unsatisfactory for operation. Complete removal by surgery of the diseased area would practically entirely remove the lower eyelid. Extensive plastic operation followed by its disfiguring scars would be necessary, and it is doubtful if even a skilful plastic operation would leave the patient free from discomfort on account of a contracted, everted lower lid, with discharge of tears on the face, secondary conjunctivitis, etc.

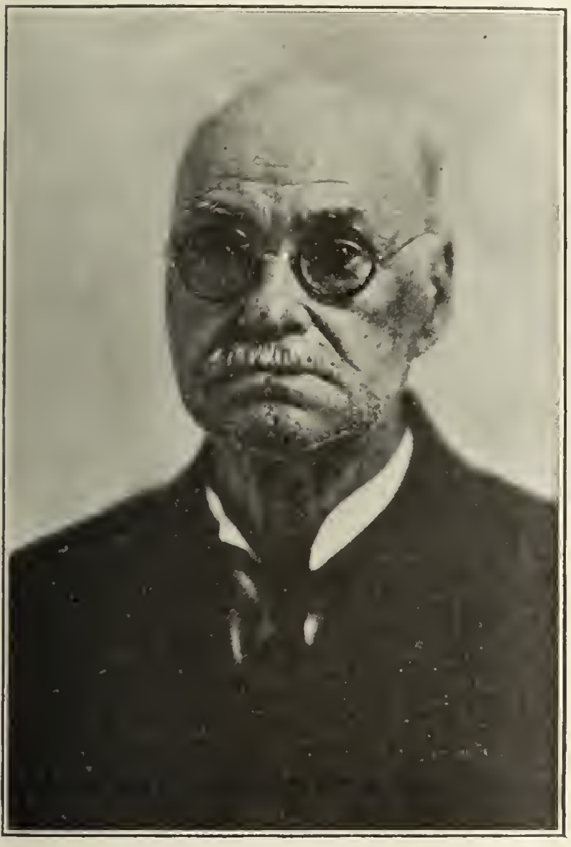

Fig. 8.—Case Shown in Fig. 7, Well Six Months Later.

Figure 2 shows the patient perfectly well nearly two years after radium treatment, with practically an invisible scar.

Figure 3 shows an old lady nearly 80, with an extensive epithelioma of the forehead. The epithelioma had formed a crater extending nearly to the bone. Tissues were adherent and thickened for a considerable distance around the crater. A very extensive surgical removal would have been necessary, demanding a disfiguring plastic closure. The whole, being a very serious surgical operation, would have taxed this patient's resistance to a serious degree.

Figure 4 shows this patient well, nearly a year after radium treatment. The original area is covered by soft smooth movable skin. There is still a slight depression visible but this is because of the original crater formation.

Figure 5 shows an epithelioma at the ala of the nose. This is in a situation where recurrence is especially liable to take place. On account of the plastic difficulties the surgeon is tempted to remove too little tissue. It has recently been shown convincingly that an epithelioma in the middle of the cheek, for instance, can be removed by a given surgeon with little chance of recurrence. However, if the same tumor is near the nose or under the eyelid the same operator will very likely have a recurrence. This is because in the middle of the cheek the surgeon can freely remove a large amount of tissue and bring the wound together. Near the nose or the eye the difficulties of doing this are so considerable that a sufficiently wide removal is not done.

Figure 6 shows this same patient about one year after radium treatment apparently cured, with no visible scar.

Figure 7. We have not yet formed a definite opinion as to whether or not surgery, radium or x-ray is in general preferable treatment for this condition. However, the present patient was an old man in advanced stage of obstinate diabetes, and in very poor general condition. A cutting operation under any form of anesthesia would have been very hazardous.

Figure 8 shows this case cured six months after radium treatment with no visible scar. Whatever may later prove to be the best routine treatment for cancer of the lower lip this case certainly proves that at least in the presence of special indications radium is a sufficiently reliable agent.

THE USE OF RADIUM IN BLEEDING FROM THE NONMALIGNANT UTERUS*

RUSSELL T. WALL, M.D.

SCRANTON

The nonmalignant type of bleeding is divided into two classes: the one caused by fibroid growths, and the other which is classified as "essential bleeding," hemorrhagic endometritis, or chronic degeneration of uterus.

The hemostatic action of radium was first shown by DeCourmelles, France, in 1904. In the next few years there were scattered articles written by Abbé, Kelly and French authors, but these attracted no great interest. It was not until the International Congress in London in 1914 that there was any active discussion. The important work dates from this congress.

The real action upon pelvic organs is not known but it is thought that it acts in three ways: it cauterizes the uterine mucous membrane; second, it scleroses and obliterates uterine muscles and vessels; third, it has an atrophying action on the ovary. It seems to have a selective action on the chromatin of the young embryonic type of cells, hence its resultant action upon ovaries, testicles and neoplasms. It is probable that by the combining action of all three we have immediate cessation of bleeding and later the disappearance of uterine fibroids.

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*Read before the Luzerne County Medical Society, December 7, 1921.

FIBROIDS

We believe that the time will soon come, if indeed it is not here already, when, in the treatment of fibroids, radium must be considered the routine and preferable treatment, and hysterectomy should be resorted to only in the presence of very definite indications.

It is very instructive to realize that among the most ardent advocates of radium in proper cases are men like Graves, Kelly and Clark of this country, and some others in France, who are gynecologists in whose hands operative treatment has reached such a high degree of safety and success.

The use of radium in the treatment of fibroids is not of recent origin but has already stood the test of years. Fauré reported excellent results to the Academy of Medicine in Paris in 1909. In *Gynecology and Obstetrique* (1921) he states that continued observation for twelve years longer has compelled him to accept radium as the treatment of choice. He operates only under special circumstances.

The indications for use of surgery in preference to radium are:

1. Such cases as tumors of a size larger than a three, or three and a half months' pregnancy.
2. In young women, to avoid artificial menopause by leaving one or both ovaries, especially if a partial myomectomy is possible.
3. Complicating pregnancy.
4. Complicating inflammatory pelvic diseases.
5. Toxic or cachectic conditions indicating absorption of necrotic fibroid.
6. All cases where diagnosis of fibroid is not certain.
7. Certain cases with associated abdominal condition such as appendicitis, gallstones, etc. Such cases are to be weighed carefully as some would be safer with a combination of radium for the fibroid and uncomplicated surgery for the other condition.

The advantages of radium in fibroids are: The certainty of stopping bleeding at once. The fibroids shrink up and disappear in two or three months. No fatal cases have been reported, and there are no irritating symptoms with the present technique. With hysterectomy the mortality in general is 5 per cent; in some hospitals it is greater. The best operators have a definite mortality from thrombosis alone. The later moral effect is good, as the patient is not mutilated; there is no big abdominal scar to be constantly careful of; and up to the present time there is no evidence that a radium treated uterus is more liable to become carcinomatous. Another advantage is the ease of application. Anesthetics are not necessary, although they are generally desirable. The treatment, if necessary, can be given at home with little more equipment or disturbance than an ordinary vaginal examination. The convalescence is also very short, being only four or five days instead of four or five months.

ESSENTIAL BLEEDING

In the "essential bleeding," that is, the type in which there is no demonstrable fibroid, polyp or carcinoma, the pathology is doubtful. There may be a spongy, hypertrophic, edematous mucous membrane, or there may be one or more small polypoid-like growths, or there may be a syphilitic condition, especially in younger women.

The most frequent picture in our group is a woman 45 to 50 years of age who has never had any indication of menopause, then periods gradually become more profuse and longer, lasting ten to twenty-one days. Some menstruate three out of every four weeks. Some may bleed a little every day for three or four months and then cease for a week or two, to begin again. Some give a history of the period ceasing at an ordinary age for the menopause but after a few months or years (18 years in one of our cases) they begin again, and the picture continues as just given. The general health is affected in proportion to the amount and duration of the bleeding. It varies from a woman who is easily tired to a neurotic, anemic, exhausted invalid.

The available methods of treatment for this condition are operation, curettage, x-ray and radium, or specific treatment if the Wassermann is positive.

In the operative treatment the objections are the same as those mentioned in reference to treatment in fibroid cases, only they are probably more important in these conditions as patients are often much older, 68 years being our oldest.

With a curette it is not always possible to remove all the diseased tissue. In our past experience, after curettment some cases have had no relief from symptoms, and when hysterectomies have been performed there would be found a small polypoid growth that a curette did not reach. Several of our cases have been curetted once or twice, cervix amputated, appendix or cyst of ovary removed, etc., with no result. Before the use of radium Kelly mentions curetting a woman 83 times before stopping the bleeding.

The x-ray has the same essential effect as radium, but it is slower in producing results and requires more time from operator and patient.

More important, it does not combine a curettage for diagnosis.

Radium has the same general advantages as in fibroids but they are more pronounced in this class. The results are more prompt, with the certainty of stopping bleeding practically guaranteed. A curettage for diagnosis is essential. This necessitates a general anesthetic such as gas and oxygen or ether.

CASE REPORT

The following is a review of nonmalignant cases treated with radium by Dr. Wainwright and myself:

Case No. 1: Age 52. Three children; youngest 24. Well until 2 years ago. Then periods became very profuse and would last about three weeks out of every four. Has made her very nervous and has been afraid to go anywhere or do anything for fear of profuse bleeding. May, 1920.—Curettage and one radium treatment. Examined 17 months later. Pelvis normal. Has felt well and strong. Has had no discharge, bleeding or pelvic symptoms. Has been to Europe since treatment. Has had some discomfort from hot flashes since treatment.

Case No. 2: Age 46. Three normal labors, last one 25 years ago. Two years ago began to have irregular and excessive uterine bleeding. Was curetted in M. T. H., February, 1920, but after eleven weeks, bleeding returned as before and has continued off and on ever since. May, 1920.—Curettage and one radium treatment. In July, 1920, bled for one week and a second radium treatment given. Examined 13 months after last treatment. Pelvis normal. Has had no discharge or bleeding since second treatment and feels well in every way. Is doing her own housework.

Case No. 3: Age 42. Periods normal until about two years ago, when they began to last three weeks. Last few months has bled more or less every day. Has a small fibroid. August, 1920.—Radium treatment; repeated in one month. Examined 15 months later. No pelvic symptoms. No fibroid palpable. Feels well and strong and is working regularly as a domestic.

Case No. 4: Age 50. Two normal labors, 9 and 14 years ago. Periods have continued up to present time, and recently have been very profuse. Condition gradually getting worse and general health is poor. Small fibroid present. August, 1920.—Radium treatment without ether. Repeated one month later. Four months later: Examination shows fibroid disappeared. Has never had any discharge or bleeding or other pelvic symptoms. General health much improved. Has been doing her own housework for last three months. Has gained sixteen pounds since treatment.

Case No. 5: Age 50 years. Married. Periods very profuse for last 14 years. Gradually increasing in amount and duration. Last two months has bled more or less every day. One radium treatment October 16, 1920. Examined eight months later. Has had no further bleeding; no pelvic symptoms. Has been doing her own housework.

Case No. 6: Age 68. Five normal labors. Menopause about 20 years ago. About five years ago began to have irregular vaginal bleeding. At times this has lasted several weeks and has recently been getting more profuse and more constant. Gradually became so weak that she was brought to hospital on stretcher. October, 1920.—Curettage and radium treatment; repeated in one month. Examined 10 months later. Pelvic condition negative. Has had no more discharge or bleeding. No pelvic symptoms. "Is better than for 20 years," and is doing all housework for self and husband.

Case No. 7: 50 years old. Married. Two and one-half years ago menses ceased for eight weeks; then two regular periods; flowed for three weeks. Consulted a physician, who said she had miscarriage and curetted her. Since then she has flowed for one month at a time. Afraid to leave home. Physical examination shows uterus enlarged—size of a small grape fruit. October 26th, with gas and oxygen, cervix was dilated and uterus curetted. Radium applied. Microscopic examination negative. November 17, 1920, patient was examined. Has had no bleeding since application of radium. No after-effects except felt some weakness and nausea following application. One month later another application; radium was placed in the body of the uterus without anesthetic. April 5, 1921.—Feels fine. Perfectly well—better than she has been for years. Examination negative. September 15, 1921.—No bleeding since application of radium; no discharge. Feels perfectly well. No symptoms of menopause.

Case No. 8: Sixty years old. Widow. Practical nurse. No pregnancies. Menopause ten years ago. Two years ago began to have profuse yellow discharge, at times bloody. Discharge gradually increased and blood became more marked. Now bleeds some daily, but never a profuse hemorrhage. January, 1921.—Curettage and one radium treatment. Examined four months later: Feels well in every way. Has had no discharge or bleeding and no pelvic symptoms. Vaginal examination negative. Seven months later writes that she is perfectly well. No pelvic symptoms. Has resumed her work.

Case No. 9: Married. Age 47. For past five years periods have been very prolonged and profuse; have often lasted four to six weeks. Once she flowed so severely that she fainted and had to stay in bed for a week. This condition has kept her very anemic and in poor general health. March, 1921.—Curetted and one radium treatment. Examined six months later. Pelvis normal. Has never had any bleeding or discharge since treatment. Feels perfectly well in regard to pelvis. Seven months later blood count showed RBC, 7,300,000; hemoglobin, 99%.

Case No. 10: Married. Age 38. One child 10 years old. No miscarriages. No pelvic symptoms until about 5 years ago; then periods became much more profuse and prolonged. At times has bled a little daily for two months. Occasionally flow is profuse. Has flowed some every day for the past three months. March 23, 1921.—Curettage and one radium treatment. Five months later well in every way. Gained eight pounds. "A great treat to be free from all symptoms." Has had no more bleeding or discharge. Pelvic examination negative.

Case No. 11: Age 51. Married at 24. Three labors. Six months ago she noticed that following normal period she would start a severe hemorrhage, severe enough to cause her to become weak and nauseated. No loss of weight. General health is good. Examination negative except for lacerated cervix. March 16, 1921.—Cervix dilated and uterus curetted. Cervix repaired. Treated with radium in body of uterus. Curettement negative. April 6, 1921.—Has slight bleeding since radium treatment. Has been perfectly well. Radium again introduced into uterus, without anesthetic. August 1, 1921.—She states that she has been perfectly well since last treatment. No bleeding; no discharge. Has had slight feeling of menopause. Examination negative.

Case No. 12: Age 18. School girl. Menstruated at 13. Since periods began they have been very irregular. Sometimes would skip a month and then flow excessively 5 to 30 days. Two years ago was curetted, and after three months was just as bad. One year ago appendix and a "cyst on ovary" were removed with no improvement. Has often flowed three to four months at a time. Last period began three months ago and has flowed every day until admitted to hospital. General health has been very poor. Is very nervous and weak and has not been able to attend school at all in past year. April, 1921.—One radium treatment. Examined eight months later: "Is fine and cannot imagine that she was ever sick." Goes to school regularly. Had a normal five-day period in July. Otherwise never any bleeding, discharge or other pelvic symptoms. No nervous symptoms or other trouble from artificial menopause. Gained four pounds. Pelvic examination negative.

Case No. 13: Age 50. Two children; one miscarriage. Has always been well and strong. Two years ago periods stopped for three months; then returned and were much more excessive and prolonged—usually flowed three weeks steadily, with a period of two weeks in between, during which she would bleed a little. June, 1921.—One radium treatment. Six months later her sister states that her bleeding has entirely ceased, but that she has hot flashes of menopause.

Case No. 14: Age 44. Married. No pregnancies. A year ago periods began to last about ten days. For the past three months has bled every day, at times very profusely. July, 1921.—Curetted and one radium treatment. Examined three months later: Has had no discharge or bleeding. Better in every way. Has no nervous symptoms of artificial menopause.

Case No. 15: Age 46. Married. Six children, last 16 years ago. Always well until about two years ago, when she began to have excessive vaginal bleeding. At times has flowed very profusely for 10 to 15 days. August, 1921.—Curettage and one radium treatment. Two months later her physician reports that she has no bleeding since treatment. No pelvic symptoms. "Feels better than for 25 years."

Case No. 16: Age 45. Three children, youngest 6. One miscarriage three years ago. Four years ago periods stopped for three months. When they began again they were more profuse and longer than before. Recently have been lasting three to four weeks. Slight leucorrhea last year. At times bleeding has been very excessive and she could hardly move without having a flow. September, 1921.—Curettage and one radium treatment. One month later writes that she is already her old self again. Had one slight normal regular period, lasting a week; otherwise has had no bleeding.

A study of this group of cases illustrates several interesting points, viz.:

1. Case No. 12 was a girl of eighteen, who since menstruation has practically been a neurotic invalid on account of more or less continuous, and at times profuse bleeding. Her condition was so distressing that when warned that radium treatment might produce amenorrhea and sterility her mother said, "We do not care. Do anything so long as you stop the present trouble." Two previous operations had been of no help. One application of radium stopped the bleeding at once, and in a few weeks the neurotic invalid was a bright, robust school girl taking part in athletics with no complaints of any kind, and with pelvic organs that she has entirely forgotten about.

2. Three cases had small fibroids. All stopped bleeding at once and were not only freed of symptoms but much improved in general health. In all cases no tumor was palpable on later examination.

3. The most interesting is the group of women over 45 of whom a typical clinical picture has already been given. These are women who, instead of showing signs of the menopause, have for years or months either been flowing profusely for 7 to 21 days or have been having more or less daily slight flow. In all these cases the flowing has ceased immediately after one or rarely two radium treatments, and in all there has been a very gratifying improvement in general health.

4. In only two cases were there the least unsatisfactory after-results. These were two women who, though cured entirely of bleeding, were quite uncomfortable from hot flashes. Both women were 50 years old, well over the menopause age, and the reason for the symptoms in these cases is obscure. None of the younger women have mentioned any symptoms of an artificial menopause.

5. The therapeutic result, therefore, in these 16 cases has been 16 complete symptomatic cures and marked improvement in general health in all, including the two who had hot flashes. In all these cases microscopic examination of curettings for cancer was negative.

CONCLUSIONS

1. Radium is practically a specific for stopping bleeding (a) in fibroids, (b) in "essential bleeding" (metrorrhagia and menorrhagia).

2. It has no mortality; when properly applied no harmful local effect. Symptoms of artificial menopause are not more common than after operation.

3. In fibroids and essential bleeding it should be the treatment of choice and should replace operation except in the presence of certain definite indications.

Dr. O. Pine queries: "Have you noticed that it is frequently an incorrigible debtor that airily pronounces medicos 'poor business men?'"

PITTSBURGH ACADEMY OF MEDICINE

STANDARDIZATION OF OPERATING ROOM TECHNIC

DR. WILLIAM O'NEIL SHERMAN

Louis Pasteur's work in medicine, undoubtedly, has been the greatest contribution to science for the advancement of humanity. Without knowledge as to the cause of disease and infection, it would have been most difficult to solve the problem that confronted the scientist of 50 years ago. We may well say that Pasteur's work is the keystone of medicine and surgery as practiced to-day.

The discovery of antisepsis by Lord Lister marks the beginning of the era of what we may term modern surgery. It was not the fact that carbolic acid had any great antiseptic properties, but that the use of carbolic acid in combination with other principles of elementary cleanliness enabled the operator materially to reduce the operating mortality and the ratio of wound infection.

The trials and tribulations of Lister and Pasteur are shared no less by those who to-day visualize the necessity of introducing principles and practices which are sound and progressive, only to be rebuffed by the self-satisfied and "standpatters," who are immune to any new ideas other than those practiced by their predecessors. The great entering wedge of homeopathy, chiropractic and osteopathy into medicine, was made possible through our medieval practice of therapeutics.

The scientist fifty years hence will look upon us much as we regard the practitioner of fifty years ago. There is a great need for reorganization and reform in our therapeutics, in all branches of medicine and surgery as practiced to-day. How frequently do we hear, "We get excellent results, and see no reason for change."

It has been rather startling to learn from visitors to continental clinics, of the generally poor surgical technique as practiced in the majority of the clinics conducted by the most eminent surgeons. How often have you heard it said, "I was amazed at the poor technique, there were but two or three surgeons practicing asepsis as it is carried out in America." While very learned in pathology, anatomy, etc., they were lacking in technique and manual dexterity. This was the situation as it existed ten years ago. No doubt, the interchange of ideas and practices during the late war has generally improved the operating room technique. American technique has been far superior to that of the continent, due to the fact that we have been more progressive, and have put into practical use the great advantages of aseptic surgery over antiseptic surgery as practiced in the operating room.

Notwithstanding the progress we have made, there is still great room for improvement. The technique in some of our leading clinics to-day is considered rather "sloppy." In order that a good technique can be carried out, it is imperative that the operator have a force of trained assistants. Undergraduate nurses should not participate in major surgery as part of the operating team. The skill and science of the operator can be nullified by errors of omission and commission in the operating room by undergraduate nurses.

It has been demonstrated beyond any doubt that the Lane noncontact technique has reduced to a minimum infection in joint and bone surgery, and if good results are to be secured in this class of work, the basic principles must faithfully be carried out.

The general status to-day on the question of open reduction in acute fractures, is in favor of the closed method, due to the fact that the operative results are generally unsatisfactory. These infections are due to the poor technique, lack of aramamentarium, traumatizing of tissues on the part of the operator, and not due to the fixation material used. During the past thirteen years, in a series of over 800 bone plate and bone graft operations, we have had but two serious, and eight to ten minor, infections. This includes closed and open fractures. The freedom from infection in these cases, suggested the idea of carrying out the same principles, as far as practical and possible, in abdominal and general surgery. Briefly, they may be stated as follows:

1. Thorough scrub-up of operator and assistants; soap and water, immersion in alcohol, drying of hands and application of gloves with dry technique.

2. The linens, instruments, and suturing material are set up on a large table, each article having its designated place. Gloves and powder are kept on a separate operating tray. From the large table, or so-called "mother table," the nurse supplies the "daughter table," or operating table. As each article is taken from the "daughter table," a fresh one from the "mother table" is put in its place. In this manner one always has at his elbow the most generally used instruments, etc. To the right of the operator is a two-basin stand; one containing isotonic sodium hypochlorite and saline, the other, sterile water. Not more than four pieces of operating furniture are in use.

3. The operating field is thoroughly prepared with a five per cent alcoholic solution of picric acid (we believe picric acid just as good as iodine for skin preparation and less irritating). The operating field is draped with sheets and towels and fixed in position with Backhaus towel forceps. A towel is placed be-

low the operating field, into which all the instruments used in making the incision and blocking the skin with towels are placed, and then discarded from the operation; all bleeding points are tied off and the skin edges are thoroughly blocked with Turkish towels, using the Moynihan towel clamps. The ends of the incision are clamped with the Backhaus clamp. After the wound is blocked, the gloved hands are sterilized by immersion in 0.5 per cent isotonic sodium hypochlorite solution. By following this technique carefully, nothing is allowed to contaminate the wound by touching the skin. There is no method that completely sterilizes the skin, so the skin should always be regarded as a source of contamination and infection. The operation is performed in the usual way. The nurse is instructed to keep all instruments clean, and to handle all materials with instruments. At no time should she come in contact with actual operating field. No. 1 plain and chromic catgut are generally used. The skin edges are approximated (where there is no tension) with Michel clips and operation completed with dry gauze dressings.

Science has so far progressed that we should be able to accept certain things as "good" practice and condemn others as "bad" practice. An elastic standardization of technique and methods is imperative. Obsolete methods and practices should be discarded. No one individual could successfully accomplish such a program, but a large surgical organization (such as the American College of Surgeons) could make certain minimum standards which should be enforced in all the hospitals of this country. We have been tardy in our acceptance of proven scientific principles. This delay has had a distinct bearing on our end results. It would redound to the scientific world were it possible to say that all hospitals in America save many lives, minimize postoperative complications, and reduce considerably the convalescent period of the patient.

DIARRHEA IN OLD AGE

DR. C. B. McABOY

In looking over the literature, one finds mention made in some of the standard textbooks of compensatory diarrhea and some attempt at classification, but no mention made of diarrhea in old people nor any special suggestions in the treatment of compensatory diarrhea.

In 1908 Heinrich Stern read a paper on compensatory diarrhea in which he discussed diarrheas in the aged and pointed out the proper principles of treatment. In 1910 Geo. N. Niles read a paper on the same subject which seems to have been inspired by Dr. Stern's paper, as it is largely a review of that paper. In diseases of old age by Charcot and Loomis, published in 1881, diarrhea in the aged is discussed in detail. These authors do not seem to have grasped the physiologic principles affecting diarrheas in the aged and their recommendations as to treatment are, as is shown later, absolutely dangerous.

Old people are particularly prone to diarrheas which do not appear to be dependent upon the ordinary causes of diarrheal conditions. This tendency to diarrhea increases as the individual advances in age. The immediate effect of these diarrheas is compensatory in character in the majority of instances and is therefore salutary. To explain this tendency there are several conditions peculiar to the period of systemic decline:

First, decrease or loss of function of the skin as evidenced by the wrinkling, loss of subcutaneous fat, and almost total absence of perspiration. Second, impaired renal function. When one considers that renal impairment is most frequently due to repeated minor injuries to the kidneys, such as acute infections, and how frequently these injuries have occurred in any life of say three score and ten, one must accept a certain degree of renal impairment as usual in old age. Third, pulmonary exalation is greatly diminished in old age. Fourth, it appears that the intestines retain their physiologic efficiency for a longer period than any of the above mentioned structures.

Therefore, the intestinal tract of the aged has to perform a more or less compensatory service all the time and any diarrhea from which the senile may suffer, regardless of what may be the exciting cause, partakes of the nature of a compensatory diarrhea. It is also apparent that the suppression of these diarrheal discharges by improper treatment may give occasion to grave symptoms and even cause death. So long as a diarrheal process continues to compensate efficiently for the decrease or loss of function of the skin, kidneys and lungs there is little or no danger so far as life is concerned. But let the intestinal discharges be stopped by opiates and astringents, and disaster follows with surprising rapidity.

Treatment: In the severe cases, confinement to bed is necessary but care should be taken to change the patient's position frequently, in order to protect him against hypostatic congestion of the lungs, to which these patients are predisposed. The diet should be some cereal mixture with milk. Fruit juices, sour milk preparations, and cream soups are also of value. The activity of the skin should be encouraged by hot baths and the external application of heat. The kidneys should be stimulated by some mild diuretic such as sweet spirits of nitre or potassum citrate. If the local irritation is not too great, copius colonic irrigations of hot saline solution should be given at rather frequent intervals, but if there is much tenesmus, starch water may be substituted to advantage. Stimulants should be started early and used freely. The value of the mineral acids in these cases, particularly after the acute symptoms have subsided and in the milder cases must not be forgotten.

Frederick B. Utley, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

February 13th, 1922

Dr. Stanley Smith, Presiding

SYMBLEPHARON

Dr. E. B. Heckel exhibited a case of pterygoid symblepharon in an adult following a burn more than a year ago. The patient had followed instructions to stretch, by pulling the lower lid away from the globe, the pedicle of tissue uniting the two, so that now there is little or no interference with eye movement. Later Dr. Heckel will dissect the symblepharon from the globe, unite the edges of the conjunctiva under it and leave the free end of the pedicle to slough off or atrophy. He reports good results from this method, which he has practiced for some years. Dr. Wible is of the opinion that the method is applicable only following superficial burns and that the symblepharon from a deep burn would not permit of such stretching.

"PROHIBITION" AMBLYOPIA

Dr. Heckel exhibited a case of prohibition (wood alcohol) amblyopia in an adult negro. Eye grounds and vision are now practically normal. Treatment was elimination, with strychnia internally. Dr. Meanor, in discussion, believes that in true wood alcohol amblyopia vision does not return. Dr. Markel had a patient who had taken a gill of wood alcohol, followed with pain in the stomach, nausea and vomiting, and blindness the next morning. There was pallor of the discs. Under eliminative treatment, vision returned to nearly normal. Dr. McMurray had a case of wood alcohol poisoning which went on to optic atrophy with completely white nerves. Dr. Smith thought Dr. Heckel's case of too fleeting character to be typical wood alcohol amblyopia. He believes the patient's fundi to be now normal.

GLIOMA OF THE RETINA

Dr. C. F. Bernatz reported a case of glioma of the retina in an adult luetic, emphasizing the fact that, in the presence of a four-plus Wassermann, we should not be unmindful of etiological factors other than syphilis. W. D. K., male, aged 53, a dancing teacher, reported on April 5, 1921, complaining of diminished vision in left eye, with supra-orbital headaches and aching of both eyeballs. Family history was negative. Personal history was negative, except for the ordinary diseases of childhood and a four-plus Wassermann. Patient had been under antiluetic treatment for several years, which included intravenous injections of salvarsan and mercury and iodides by mouth. External examination showed both eyeballs free from inflammation; pupils responsive to light, accommodation and convergence. Response to light was slightly sluggish on the left side. Ophthalmoscopic examination of right eye showed media clear; no changes in disc; fundus slightly congested. Ophthalmoscopic examination of left eye showed media clear; detached retina, superior nasal portion; disc good color and cupped; arteries and veins normal in caliber. Vision with glasses as worn was 20/30 in right eye, and 20/100 in left eye.

Transillumination of left eye showed no shadow present. Vision remained unchanged until August, when vision in left eye failed rapidly and the detachment of the retina increased to a degree which obscured the disc. Transillumination showed no shadow. On September 20, 1921, patient suddenly developed severe pain in left eyeball, with headache and vomiting. Examination showed secondary glaucoma, with tension increased to plus three. Transillumination showed darkness in all portions of the eyeball. Glaucoma did not respond to treatment. Blood pressure was normal. Consultation with another physician at the patient's home brought up the question of differential diagnosis between hemorrhage into eyeball and gumma of tumor formation. Hemorrhage was excluded by ophthalmoscopic examination. To exclude gumma, it was suggested that iodides and mercury be increased to point of tolerance as rapidly as possible. On account of the patient having been on active antiluetic treatment for several years under the supervision of a qualified urologist, it was the writer's opinion that little help could be hoped for from this line of procedure. Feeling confident that a tumor was present in the eyeball, enucleation was suggested as the safest alternative. Patient agreed and eyeball was removed at the earliest possible moment. Laboratory examination revealed the presence of a glioma springing from the nasal portion of the retina, with beginning metastasis in and around the optic nerve.

Dr. Weisser thought the case unusual from the standpoint of the age of the patient and that metastasis had occurred so early.

PERFORATING WOUND OF THE CORNEA

Dr. E. E. Wible reported two cases of perforating wound of the cornea. Case I, A. G., aged 10 years, was admitted to the hospital and seen by the writer within a half hour after the accident. An older playmate was attempting to drive a nail, which ricochetted and struck the patient's left eye, causing a vertical laceration of the cornea, about 4 m. m. in length, extending downward from the eleven o'clock point. There was no protrusion of iris. The eye was irrigated with boric acid solution, atropin solution was instilled and a compress bandage applied. Instructions were to dress the eye in this way thrice daily and to keep the patient in bed. Patient was extremely refractory and on the fourth day there was a prolapse of iris. An iridectomy was done, and on the following day the entire cornea was opaque. The cornea slowly cleared in about a week, except for a band of of infiltration nearly 2 m. m. in width along the line of the wound. Patient left the hospital on the twenty-first day. Injured eye, six weeks after the accident, is free from inflammation, with faint white cicatrical line at the site of corneal laceration. Pupil is slightly pear-shaped and vision is normal.

Case II, J. S., aged 18 years, was admitted to the hospital with a history of having been struck in the left eye with a long, light yellow stem of a weed which was thrown spear-fashion by an associate. There were some abrasions of both lids and a laceration of the cornea, its entire diameter, extending downward from the eleven o'clock point. The patient was kept in bed, with applications of boric acid solution, atropin, cold compresses and a compress bandage. He was tractable, very little reaction from injury ensued, and there was no prolapse of iris. On the third day, opacification of the lens began underneath the line of the corneal wound and slowly extended. It has seemingly stopped at present, leaving a clear segment on the temporal side of about one-sixth of the lens. It has now been seven weeks since the accident, and needling has been deferred until there are indications of arrest of absorption of the cataractous lens. Patient remained in hospital only one week. There is a rather wide cicatrix resulting from the corneal wound. Comparing the two cases: The first, apparently the more severely injured, with more marked reaction and an intractable patient, no cataract ensuing, a smaller cicatrix of the cornea, and normal vision. In the second case, while the laceration was longer, there was little reaction, patient was tractable, there was no prolapse of iris, but cataract ensued.

TRAUMATIC ATROPHY OF THE OPTIC NERVE

Dr. E. A. Weisser reported a case of atrophy of the optic nerve following concussion of the head—Mr. M., aged 42, laborer, married and father of two healthy children. On January 24, 1922, he fell 10 feet from a ladder, striking his head over the left eye, producing a laceration one inch long over the eyebrow and causing loss of speech for twenty minutes. Clinical and x-ray examination revealed no fracture or injury to the eyeballs or sockets. General surgeon's diagnosis was concussion of the brain. Patient claimed immediately that he was practically blind in the left eye. External examination of eyes showed both corneæ clear, pupil of right eye 3 m. m. in diameter and responsive to light, accommodation and convergence; pupil of left eye was 5 m. m. in diameter, did not respond to direct light, responded to indirect light and to accommodation and convergence. Ophthalmoscopic examination showed media of both eyes clear and fundi negative. On February 2, 1922, ophthalmoscopic examination showed beginning optic atrophy in left eye. When last seen, about five days later, condition was about the same.

Diagnosis is that the left optic nerve was injured, either by direct force or by pressure from hemorrhage into the sheath, somewhere back of the entrance of the central retinal artery but anterior to the chiasm.

Dr. J. C. Markel reported that pathological examination of the nodules taken from the lobe of the ear of his patient with tumor near the putuitary body, reported at November, 1921, meeting (Pennsylvania Medical Journal, January, 1922, page 275) showed them to be fibroma of the skin, with no etiological relationship, therefore, to the intracranial growth.

George H. Shuman, M.D., Secretary.

COMMUNICATIONS

To the Editor:

Dear Sir: A conference was held in Washington, D. C., June 6, 1922, which was attended by Mr. David H. Blair, Commissioner of Internal Revenue, Washington, D. C.; Mr. Ambrose Hunsberger, President of the National Druggists' Association; Dr. George A. Knowles, President of the Medical Legislative Conference of Pennsylvania, and the Secretary of the National Druggists' Association. After the conference the following letter was forwarded to Mr. Blair:

"In accordance with our understanding at the conference held with you on Tuesday, June 6th, I am sending you a brief of the principal points involved in our discussion.

"First. Objection was made to a recent regulation to the effect that physicians who prescribe narcotic drugs to incurable patients should write on the prescription blank not only the name and address of the patient, but also in unequivocal terms a diagnosis of the disease from which the patient suffers. As this is contrary to the holding of the courts in every civilized land that a physician's confidence cannot be violated, it naturally places before the medical profession an impossible situation. We ask that this be rescinded immediately. In this connection an objection of less serious moment was made to the requirement that the druggist should return a prescription calling for a narcotic and obtain on the back of it the signature of the one to whom it is to be delivered. Objection to this was made on the grounds that it raised a question in the minds of the physician's patients, suggesting that the physician had made a mistake and the druggist is asking for the signature of the person who receives the prescription to guard against possible future trouble. We contend that sufficient data are furnished when the physician writes the name and address of the patient on the prescription, and earnestly object to any further annoyance to the patient and physician.

"Second. We discussed the ruling which makes it impossible for a physician with the official narcotic order form to purchase a few tablets of narcotic drugs from a retail druggist, even though he be on his way to see a patient whose painful symptoms demand immediate relief; and at the same time we pointed out the illogical fact that the law permits a physician with this regulation blank to obtain quantities of narcotic drugs in *solution* aggregating as much as 250 grains under exactly similar circumstances. We spoke of the ruling which permits anyone without any prescription to purchase at a drug store a quantity of a mixture which contains narcotic drugs while the physician's prescription, even if it calls for a less quantity of narcotic in a mixture, is subject to all the rules and regulations of the Narcotic Act. We take this opportunity of recalling the Commissioner's own remarks at the time of the meeting to the effect that such legislation was playing into the hands of crooks at the expense of the medical profession and its patients. Our suggestion is that this illogical situation be corrected and that it be made possible for a physician to purchase small quantities of narcotics, such as are contained in the standard tubes, without having recourse in each instance to a special permit.

"Third. We raised objection to the ruling that a physician may not prescribe more than a week's supply of narcotic drugs, without special permit, for a patient suffering from a chronic or incurable disease, on the grounds that it is totally impossible to compute the quantity that composes a week's supply and that there are many instances of people suffering from chronic, painful and incurable diseases where at the time of the physician's vacation, for instance, for many reasons that are obvious, it would be highly desirable to grant that patient an amount of morphine that would tide him or her over the period mentioned and save the necessity of calling in a new physician to prescribe a much needed narcotic. We submit that the asking for special permission for such a purely medical proceeding, including as it does the right of the local narcotic agent to be the judge of what is or is not proper prescribing, is an objectionable interference in medical practice.

"Speaking generally we make a common objection to each one of these regulations on the grounds that they appear to place the physicians in the list of prejudged criminals, and in at least one instance, have the effect of suggesting to the mind of the patient that such a hypothesis is warranted; and that the regulations have all the appearance of having been formulated without obtaining the views of reputable physicians representing State, County or National Societies.

"We object to the regulation forbidding a druggist to honor a prescription calling for a narcotic drug if written in pencil on the grounds that a serious emergency might exist where the physician might not be provided with ink, and the regulation might work great hardship in consequence.

"We believe that codein should not come under the act, as it has not been proved to be a habit-forming drug.

ALCOHOL

"First. We make objection to the limitation of the prescription of whiskey to one pint for 10 days for each patient. The reasons for this objection we will not now outline because of the answer that this quantity is limited by law and is not within the regulation of the Commissioner of Revenue.

"Second. The prescriptions of alcohol for rubbing purposes are not satisfactory. Many of the ingredients which are compelled to be included with the alcohol in order to make it a non-potable are irritating to the skin of the patient and to the hands of the rubber.

"Third. Objection was also made to the fact that whiskey and spirits can be obtained only from wholesale druggists and, perhaps through no fault of theirs, the quality is for the most part exceedingly poor. We ask that a standard of whiskey be established, and that sale below such standard be illegal.

"Fourth. Objection was made to the inclusion, subject to regulation under the Volstead Act, of preparations which contain alcohol but which appear in the Pharmacopœa and the National Formulary."

Very truly yours,
J. Norman Henry, M.D.
President Philadelphia County Medical Society.
1906 Spruce St., Philadelphia.

FATIGUE AND MALNUTRITION OF CHILDREN

Two cases are cited by Borden S. Veeder, St. Louis (*Journal A. M. A.*, Sept. 3, 1921) to illustrate how fatigue alone may be responsible for failure to gain weight and develop along normal lines. The question of sleep is very closely bound up with the subject of fatigue and malnutrition. While it is absolutely impossible to lay down fixed hours for each age and, further, so many variables enter in, as the place of sleeping, sleeping equipment, general physical condition of the child, the amount of physical exercise or work the child performs, and the like, that latitude must be allowed and common sense used. But Veeder believes there is a minimum, and he has arbitrarily fixed a "minimum table," based largely on the amount of sleep of physically fit children, and in practice it has been fairly satisfactory. From 1 to 2 years, 13 hours; from 2 to 4 years, 12 hours; from 4 to 6 years, 11 hours; from 6 to 10 years, 10 hours; from 10 to 14 years, 9 hours. As a matter of fact, most children take more. But a normal, active child who takes less is on the danger line so far as normal development is concerned.

IN MEMORIAM

DR. DAVID F. UNGER

At the meeting of the Franklin County Medical Society held on June 20th, the following note and resolutions were adopted:

Dr. Unger: The hoary head, the honest hand clasp, the genial smile and witty comeback that left no wound; the quaint rehearsals of little episodes that punctuated his serene pathway! We shall miss him. He has departed for new fields of experience. May they be felicitous and interesting.

Whereas, David F. Unger has been removed from our midst by death, after a lifelong of devotion to the alleviation of afflicted and suffering humanity, in which pursuit he manifested exceptional skill, felicity of manner and a high standard of professional honor; therefore, be it

Resolved, That in his death the community has lost a most estimable citizen and devout servant of humanity, his family a kind and loving father, and this society a devoted and honorable member and friend. Be it further

Resolved, That we extend to his family our sincere sympathy at his departure and an expression of our appreciation of his nobility of character and attainments.

Charles F. Palmer,
T. H. Weagley,
Committee.

RESULTS OF ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN

The immunity response to the same mixture of toxin-antitoxin, according to the observations of Abraham Zingher, New York (*Journal A. M. A.*, June 24, 1922), varies greatly in different groups of children. A preliminary stimulation of the tissue cells in Schick-positive children, as a result of repeated exposure to infection with the diphtheria bacillus, even though slight and not showing itself in the form of a perceptible amount of antitoxin in the circulating blood, seems to be sufficient to enable the cells to give a more ready response to the injections of toxin-antitoxin than in other Schick-positive children whose cells have not been previously stimulated by such exposure. After a first series of toxin-antitoxin injections, the immunity response to the second series did not follow any more the inverse ratio noted between original susceptibility of the children in a school and the percentage of successfully immunized children in the same school. Three doses of toxin-antitoxin, each from 1 to 1.5 c.c., injected a week apart, give much better immunity results than two doses. A longer interval between the injections of toxin-antitoxin, probably two weeks, may be found of advantage in producing a better immunity response. At least six months should be allowed to elapse between the injections of toxin-antitoxin and the Schick retest to determine the development of an active immunity. A second series of two or three injections of toxin-antitoxin should be given to those who have not become immune after the first series. There are a few children who are difficult to immunize with toxin-antitoxin even when they are given several series of injections. In the schools reported, from 70 to 93 per cent of children were rendered immune after two series of toxin-antitoxin injections. There is practically no danger from anaphylaxis, either in repeating the injections of toxin-antitoxin or in giving toxin-antitoxin after a preliminary injection of antitoxin.

NICHOLSON VIADUCT (LARGEST IN THE WORLD) ON THE D., L. & W. R. R., AS SEEN FROM THE TRAIL NEAR NICHOLSON, PA.

COMBINING PLEASURE AND PROFIT

The celebration of the opening of the "Lackawanna Trail" the latter part of June, in which the governors of three states, New York, New Jersey and Pennsylvania, participated, was an event of interest to physicians all over the state of Pennsylvania; for this trail, that unique highway crossing the northeastern end of the state, will be one of the big attractions to the physicians and their families who will motor to the State Society meeting at Scranton in October.

It is along this trail in both directions—the great Nicholson viaduct at the northern end, and the Poconos to the south—that outings will be conducted by the Ladies' Auxiliary to the Lackawanna County Society. All the eager anticipations of a drive and a luncheon amid beautiful surroundings during the first inviting days of earliest autumn, are sure to be realized in the programs arranged by the women's committees of the Lackawanna County Society. The roads to Scranton, from every big center of the state, should be at their very best in October. The most convenient and the most satisfactory routes will be published in ample time in a succeeding number of The Pennsylvania Medical Journal.

The scientific program, which is the big incentive, of course, of the State meeting, will, we feel, be one of unusual excellence.

There will be the great convenience of having all the sessions and exhibits under one roof, most conveniently arranged, in the big State Armory at Scranton.

Among the subjects of engrossing interest in medicine that will be discussed at the Scranton meeting is that of "Goitre." No phase of this subject will be left undeveloped. Basal metabolism, with its new interest, will be thoroughly demonstrated in the surgical section. There will be a clinic, at which the several types of goitre will be shown and discussed, and the prophylaxis of goitre will be handled by a foremost au- whose great work in the survey of the public thority, Dr. David Marine of New York City, school girls of Akron, Ohio, was received with profound interest a few years ago. There will

SCENES NEAR DELAWARE WATER GAP VIEWED FROM THE TRAIL

SUSQUEHANNA RIVER AS SEEN FROM TRAIL NEAR HALLSTEAD, PA.

be no phase, therefore, of goitrous conditions that will be left undeveloped at the Scranton meeting, and the subject, as comprehended in the plans for the meeting, should make its appeal to every practitioner in the several branches of medicine.

The social arrangements are features not to be forgotten. No session is so pleasant as when attended by the wives of the doctors, making it a real holiday, for pleasure as well as profit.

Ere this you have decided to attend the Scranton Session. In order that you may not be disappointed in hotel accommodations, the hotels of Scranton are herewith appended, and we would advise that you make your reservations early.

Scranton's leading hotels (all European plan except the Holland), with their location and rates, follow:

Hotel Casey (400 outside rooms), Cor. Lackawanna and Adams Aves.—*Single rooms:* without bath, $2.50 and upwards per day; with running water and toilet, $2.75 and upwards per day; with shower, $3.00 and upwards per day; with tub bath, $3.50, $4.00 and $5.00. *Double rooms:* with running water, $4.00 and $5.00 per day, according to size and location; with bath, $7.00, $8.00 and $9.00 per day.

Hotel Jermyn (220 rooms), Cor. Wyoming Ave. and Spruce St.—*Single rooms:* without bath, $2.50 to $3.50; with bath, $3.50 to $5.00 per day. *Double rooms:* without bath, $4.00 to $6.00 per day; with bath, $6.00 to $8.00 per day.

Hotel Holland (62 rooms), Adams Ave., between Mulbererry and Vine Sts.—*Single rooms,* $3.50 per day; *double rooms,* $7.00 per day.

Scranton House (40 rooms), Lackawanna Ave.—*Single rooms,* $1.50 per day; *double rooms,* $2.50 per day.

Lackawanna Valley House (75 rooms), Cor. Lackawanna and Franklin Aves.—Single *rooms,* $2.00; *double rooms,* $4.00 per room; thre persons in room, $4.50 per room.

Hotel Marquette (85 rooms), 416-20 Adams Ave.—*Single rooms,* $1.50 and $2.00; *double rooms,* $3.00, $3.50 and $4.00.

Don't forget to make your reservations early.

SUSQUEHANNA RIVER AND BRIDGE ALONG THE TRAIL AT GREAT BEND, PA.

PROPAGANDA FOR REFORM

More Misbranded Nostrums.—The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act:

Iron Elixir (Charles S. Miller), a dilute watery solution of sodium citrate and iron chlorid, with a slight trace of alcohol, sold as a cure for pimples and boils and as a blood purifier.

Vegetable Regulator (Charles S. Miller) an alkaline watery solution containing aloes and baking soda, claimed to be a remedy and cure for diseases of the liver, diseases pertaining to the stomach and bowels.

Diuretine (East India Medicine Co.), consisting of potassium acetate, buchu extract, a laxative plant drug, oil of juniper berries, sugar, alcohol and water and represented as a cure for Bright's disease and other conditions.

Bloodzone (East India Medicine Co.), consisting of extractives of plant drugs, including a laxative drug, sugar, alcohol and water and represented as a cure for syphilis, cancer, rheumatism, catarrh, boils, psoriasis, pimples and many other conditions.

Grantillas (Eneglotaria Medicine Co.), containing emodin-bearing plant extractives and cramp bark and claimed to be "the best existing uterine tonic," a first-class general tonic in anemia and chlorosis and a cure for "hysteria."

Winslow's Sarsaparilla Compound (Howard Drug and Medicine Co.), consisting essentially of extract of plant material, including sarsaparilla, potassium iodid, glycerin, alcohol and water and claimed to be a reliable remedy for scrofula, chronic ulcers, syphilitic affections, etc. (*Jour. A. M. A.,* May 6, 1922, p. 1407).

More Misbranded Nostrums.—The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act, chiefly because the therapeutic claims made for them were unwarranted.

Compound Fluid Balmwort (The Blackburn Products Co.), consisting essentially of plant extractives, including bearberry, a large proportion of sodium acetate, alcohol and water.

Whitlock's Child's Laxative (Whitlock Herb Medicine Co.), containing senna, Rochelle salt, sodium salicylate, soda, alcohol and water.

Whitlock's Cough Sirup (Whitlock Herb Medicine Co.), consisting of plant extractives, licorice, sugar, alcohol and water.

Whitlock's Cathartic Sirup (Whitlock Herb Medicine Co.), containing extracts of plants, including jalap, senna, fennel and peppermint, sugar, alcohol and water.

Whitlock's Nervine Pills (Whitlock Herb Medicine Co.), containing plant material, including asafetida, valerian, licorice and an ammonium compound.

Whitlock's Blood Pills (Whitlock Herb Medicine Co.), containing plant material, including red pepper, aloes, colocynth, and scammony.

Whitlock's Female Cordial (Whitlock Herb Medicine Co.), containing extracts of plants, including senna and jalap, alcohol, sugar and water.

Whitlock's Kidney and Gravel Medicine (Whitlock Herb Medicine Co.), containing volatile oils, including oil of sassafras, anise, and turpentine and alcohol.

Red Indian Liniment (Whitlock Herb Medicine Co.), containing oil of turpentine, acetic acid, ammonium chlorid, alcohol and water.

Whitlock's Worm Cordial (Whitlock Herb Medicine Co.), containing plant extractives including spigelia and senna, glycerin, a small amount of salicylic acid, sugar, alcohol and water.

Whitlock's Nerve Pills (Whitlock Herb Medicine Co.), containing colchicin, asafetida and extract of hops.

Whitlock's Rheumatic Pills (Whitlock Herb Medicine Co.), containing colocynth, jalap and guaiac.

Whitlock's Kidney Pills (Whitlock Herb Medicine Co.), containing copaiba, extract of cubebs, a trace of oil of turpentine and magnesia (*Jour. A. M. A.,* May 20, 1922, p. 1556).

Intravenous Compound (Loffler).—This is exploited by the Intravenous Chemical Company of Chicago. While physicians are asked to use this preparation and told of the profits to be derived from its use, they are not informed of its composition. From the analysis of this preparation in the A. M. A. Chemical Laboratory it was concluded to be a mixture of alkali chlorate and nitrate and boric acid probably produced by fusing together the constituents. Its composition is very similar to that of Oxychlorin and Zyme-oid, which were analyzed by the laboratory nearly fourteen years ago. Intravenous Compound (Loffler) is a nostrum of secret composition which physicians are asked to inject into the veins of their parents. It must be purchased in connection with some supplementary material, "a complete set of apparatus" sold by the same concern. Its successful administration is said to depend on following a technic detailed either in a booklet sent out by C. L. Loffler or given by him in a "postgraduate course" which costs physicians fifty dollars unless they have purchased six dollars' worth of another nostrum "Thymozene." The intravenous administration of drugs is impressive. To the patient the technic and its psychic effects is striking. The dangers of intravenous medication are matters of record, and yet physicians are asked to administer this preparation, the composition of which and the effects produced by it are unknown to him (*Jour. A. M. A.,* Nov. 12, 1921, p. 1591).

Seleni-Bascca.—A campaign of free publicity is carried on for an alleged remedy for cancer. The press agent material has been of two kinds—for medical journals and for newspapers. That for medical journals has been sent out on the stationery of the Medical News Bureau, 77 Seventh Ave., Brooklyn, N. Y., D. E. Woolley, Manager. The items sent out to medical journals stated that the "Basic Cancer Research" had been organized to develop a treatment of cancer by the use of selenium and tellurium. The material received by newspapers was sent out by the "Cosmopolitan Cancer Research Society," 847 Union St., Brooklyn (the same address as the Basic Cancer Research). The secretary of the Cosmopolitan Cancer Research is D. E. Woolley. The name of the preparation which the Basic Chemical Corporation puts out is Seleni-Bascca. A specimen, labeled "*Selenibascca.* A mixture of Colloidal Selenium in tablet form," was examined in the A. M. A. Chemical Laboratory. The tablets were found to contain only about 1.3 per cent of selenium, and the product was not colloidal as claimed. The composition of Seleni-Bascca desembles that claimed for Sulpho-Selene, a preparation reported on by the Council on Pharmacy and Chemistry some years ago, but it contained no bile salts (a constituent claimed to be present in Sulpho-Selene) (*Jour. A. M. A.,* Nov. 19, 1921, p. 1672).

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JULY, 1922

EDITORIALS

LABORATORY APPARATUS FOR THE PRACTICING PHYSICIAN

The rapid development of laboratory procedures that are useful in the diagnosis and treatment of medical conditions has been noteworthy. Almost every medical problem that confronts a physician to-day demands a certain amount of laboratory work, if its solution be complete. So rapid has been the progress in this field of medical science that only the most recent graduates have been taught the technique of many of these tests; and yet, by reason of the excellent methods of disseminating knowledge among physicians, and by reason of the intense interest manifested in medical science, the understanding of the application and usefulness of laboratory tests is amazingly widespread. We thus find a very large demand for laboratory procedures among physicians who understand the indication and interpretation of these tests, but who are either too busy to carry them out themselves or lack the necessary technical education. Moreover, to have these tests made in laboratories is often so expensive that patients of moderate means cannot afford them. Consequently many physicians constantly face the situation in which they realize full well the help that certain tests render, but the expense to the patient is such that they are beyond reach.

To meet the situation conscientious physicians often desire to install in their own offices laboratory apparatus, in order that they may render their patients the very best service without subjecting them to an excessive financial outlay. This wish is widespread, and as a result there is to-day a very great demand for simplified apparatus by means of which the physician, or his office attendant, may carry out the more common tests, despite the lack of previous laboratory training.

This demand has stimulated many commercial interests, with the result that one now frequently sees advertisements of laboratory "sets" for which exaggerated and even false claims are made. In fact, it is time to offer a warning to physicians: Be wary about investing in laboratory apparatus for which such claims as "ease of operation," "absolute accuracy" etc., are made.

The commercial zeal of technical supply houses must not be discouraged; it is of real benefit to the medical profession in stimulating the steady development of better and more useful technical apparatus. However, the desire to sell has in some instances overbalanced the desire to serve, so that claims are made that are not alone exaggerated but at times actually false. Under the spur of competition this evil may easily become very serious and it would be a very wise move if the American Medical Association would prepare to examine and pass upon the claims made for laboratory appliances, just as it now does for drugs. Official examination and recognition would be welcomed by those manufacturers whose desire is to supply the needs of the profession; and it would put a check upon the others who are quite willing to make any claim, as long as they receive the physicians' money.

Every encouragement should be extended the doctor who wishes to carry out any laboratory procedure in his own office. The greatest aid he can receive, however, would be a clear presentation of the inherent difficulties of the field he desires to enter. He should be brought to recognize that there is no laboratory procedure that does not require a certain degree of technical skill; and even with technical skill and constant practice any laboratory test is apt to "go wrong" unless carefully and constantly checked. This need not discourage a physician who honestly wishes to undertake such work. However, before doing it he should visit a good laboratory, either hospital or university, and have an expert go over his problems with him. In this way he can decide for himself just what procedures he can safely undertake and just what apparatus he should install for this purpose. To prepare thus may require several days' absence from practice; but it may save foolish waste of money, disappointment and unnecessary discouragement.

We warn the physician to be cautious in accepting exaggerated claims of "ease of manipulation" and "absolute accuracy" in regard to laboratory apparatus. If he wishes to perform the tests himself, let him take a vacation, go to a recognized medical school laboratory, and have an expert who is familiar with his needs aid in the problem. By so doing he will, in the end, save much time, expense and discouragement.

R. R. S.

OBVIATING THE FEAR OF OPERATION

The fear of operation to a great extent has been the cause of delayed operations in many instances. This fact can be attested by a review of cases seen by every surgeon. The fear of pain attached to an operation is not greater than the fear of taking a general anesthetic to be relieved of the pain during operation.

One can well imagine the terrible suffering which humanity underwent in the dim past, prior to the introduction of anesthesia, when opiates and other means were used to dull the senses, but in this modern age we are blessed with the relief from pain by the effects of a local or a general anesthetic. Nevertheless, every individual, either doctor or patient, who needs to undergo any form of operation, seriously dreads that occurrence. You have had teeth extracted, one or many, and the very thought of it gave you a feeling of hesitation and a desire to put off the event as long as possible. The physicians, who realize what pain and operations mean, are the most reluctant to undergo them. We can, therefore, understand why the lay patient who does not have our experience should equally dread surgical interference.

We are discussing this subject for the purpose of trying to show the need of approaching patients who require operation to allay the fear of said operation by every means possible. A great many of the operations performed upon the human body can be done under local analgesia and anesthesia. Nerve-blocking gives the surgeon an opportunity to do work very deliberately, tactfully and without excessive trauma. In the preparation of the patient, fussiness and a desire to show off in the multiplicity of detail, places the patient in a nervous state which should be avoided. The sooner the operation determined upon is performed, the better for the patient, because long anticipated operations render the nervous condition greater.

It is now regarded as of utmost importance that a general anesthetic be given by an experienced anesthetist. This point has been well brought out in the discussion of anesthesia by the dentists, who show the existence of germ life about the teeth and gums which is frequently inspired during anesthesia and produces postanesthetic pneumonia. Such bacteria as staphylococcus, streptococcus, pneumococcus, and many other varieties of bacteria are found on culture, especially where the teeth are necrotic, pyorrhea exists, or there is a lack of oral hygiene. It used to be supposed that most any one in the hospital, nurse or orderly, could give an anesthetic, but to-day only one skilled in the administration of an anesthetic should be allowed to assist in the operation in that capacity.

Local anesthesia was made possible by the discovery and use of cocaine, but it was toxic and habit-producing to such an extent that it has been largely displaced by novacain. Since the introduction of novacain other chemicals for the production of local anesthesia have been prepared, and now we have a variety of remedies that are nontoxic in character which can be used for local anesthesia and nerve-blocking.

The successful operator should not consider alone his dexterity and surgical skill, but should endeavor to cultivate by every means his ability to allay the patient's fear and dread of even the slightest surgical operation. Postoperative shock is decreased and more rapid convalescence is secured where nervous interference is at a minimum. True, postoperative pain and shock cannot be entirely eliminated, but by the use of scopolamin-morphin anesthesia postoperative conditions may be much improved over what they formerly were and the patient's convalescence may be hastened.

CERTAIN FUNDAMENTAL ERRORS IN THE DIAGNOSIS AND TREATMENT OF MYOCARDIAL INSUFFICIENCY

This is the subject of an address delivered before the Canadian Medical Association by Dr. Charles Lyman Greene, of St. Paul, Minnesota.* He calls attention to the harmful effect of the traditional optimism on the one hand and pessimism on the other, with respect to the course of established cardiovascular disease and the after life of the cardiopath. He emphasizes the following fundamental points which are very important and which will bear repetition until they are more generally observed than now:

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*Canadian Medical Association Journal, September, 1920.

The faulty method of approach which leads one initially to seek to establish the abnormal rather than to prove the existence of the normal.

The tendency to undervalue systolic or post-systolic apical nonstructural murmurs and, on the other hand, to focus attention upon the valvular lesions rather than the condition of the heart muscle which is basic in all cases, together with a lack of understanding of the vital importance of tonicity and the readiness and frequency with which it is impaired, and a failure to appreciate the large proportion of deficient hearts, which though diseased are not the seat of valvular disease or of frankly expressed myocardial inflammation or degeneration and are wholly or relatively silent.

The failure to recognize fully the fact that in acute infections of an exhaustive type and in major surgical operations the heart is affected, the chief source of weakness associated with these conditions being the myocardium, and that in consequence it becomes necessary not only to watch the heart with great care under such conditions, but also to insist upon longer convalescent periods than at present allowed and whenever possible to investigate the heart condition from time to time during a considerable period thereafter.

The fact that in all probability, nine-tenths of the cases of abnormal enlargement of the heart, whether due to dilatation, hypertrophy, or both, under present clinical methods remain wholly unrecognized.

That certain fundamental factors of error exist, embracing the almost universal employment of a false normal for the transverse cardiac diameter and a failure to appreciate the extreme variations which may exist owing to the fundamental differences in type of bodily structure. To this may be added the continued, almost general employment of landmarks almost wholly undependable.

The unfortunate tendency to underestimate not only the actuality but the frequency of a readily produced cardiac overstrain not infrequently associated with lesser grades of dilatation.

The general failure to recognize the subjective symptoms of persisting myocardiac inadequacy and reserve impairment, such as constitute a most important factor of the evidences of this condition, when existing in its minor but vital degrees.

The failure to recognize the extreme value of rest, absolute or relative as indicated, and the administration of adequate doses of digitalis as a diagnostic measure. The importance is not yet perfectly recognized of a type of individuals embracing a considerable proportion of the population who are from birth actually or potentially inadequate, structurally or functionally, and in various degrees unable to meet excessive or even moderate stress or strain in life and living.

That the treatment of cardiovascular disease at present is in general inefficient, unsystematic, desultory, halting and fatally belated; whereas it should be early, timely, efficient, rational, systematic and sufficiently prolonged in appropriate cases to secure for the cardiopath the highest possible degree of disease retardation and myocardial rehabilitation.

The failure to apply to the cardiopath the same wise procedure with respect to diagnostic and therapeutic initiative, timeliness, accuracy, and systematic thoroughness, together with opportunities for institutional care, which now is granted the victim of tuberculosis after centuries of like neglect, is wholly unpardonable.

G. E. H.

PULLING TOGETHER

The chief problem that confronts the medical profession in this state to-day, is to get the delinquent, the lax and stragglers, into line and inspire them to pull together. Distressing conditions are facing the profession and must be met within a year. All manner of pathies and drugless ilk are designing to secure favorable legislation to further their nefarious schemes and practices. They are combining their interests and are planning to secure legislation inimical to their designs. Their infamous schemes must be blocked.

The way to unite is to quit talking about it but get busy and acquire that tremendous pulling-together momentum that cannot stop at the line which marks the goal: favorable legislation for the establishing of an equitable, fundamental basis for the studying of all divisions of the science and art of medicine. As one great scientific body, physicians, druggists, dentists, veterinarians, have a common interest, the best for unfortunate mankind in all walks of life.

We should get it into our heads that there is no greater inspiration in the work of the medical profession than that which comes from the satisfaction that every organization is in line and has caught the enthusiasm of keeping step in pulling together.

A. F. M.

INTRAVENOUS INJECTION OF QUININE.

The United States Public Health Service has recently issued a Bulletin advising caution in the routine use of intravenous injection of quinine in the treatment of malaria. Cases of severe collapse have been reported following this procedure. Accidental extravasation into the tissues at the point of injection is apt to cause local necrosis and sloughing.

If this method of administration is under consideration the physician must be sure that the patient is not already suffering from circulatory embarrassment. All the precautions that are observed in giving a dose of salvarsan should be observed in giving quinine.

A. C. M.

EX LIBRIS MEDICI

THE UNCONGENIAL COLLEAGUE

"A jealous competitor is a disagreeable companion. He may be polite and pretend to friendship that he does not feel; he may be cold and reserved, with a frigidity that chills ones very marrow bones; he may be disagreeable and sententious; or he may be furious and insulting, according to the circumstances under which we meet him. He is usually narrow-minded and incompetent or he would have nothing to be jealous about but of course he does not realize that, nor does he know that he sometimes makes himself ridiculous with his consequential manners and absurd pretentions."

"Hear, hear," we said, "Language like that should be printed not spoken. It's too classical; nobody talks like that now-a-days. But what have you in your system? Somebody been trespassing on your preserves?"

"Not at all, not at all, I don't practice as you very well know. How can anybody trespass on my preserves?"

"Well," we said, "there is something the matter; what is it?"

He drew a small book from a large pocket, and settled himself in the chair, saying as he did so, "Ever read 'Dr. Thorne' by Anthony Trollope? No? Well, it's worth while, and in it you will find an account of what I was talking about that may make you laugh. Let me read a little, but before I do, let me explain. Dr. Thorne, the hero, or at least the chief character in the story, is the friend and physician of a certain Sir Roger Scatcherd. The latter was a working man, that in time became a railroad contractor and acquired great wealth and a title. He was also a drunkard, and it was for the results of this habit that most of Doctor Thorne's visits to him were required.

"Just before the episode I am about to read, he sent for Thorne, being in a frightful condition, and sought advice, receiving what he expected, a positive recommendation to total abstinence for a time. This provoked him to anger with his friend, whom he discharges as physician, with the request that he tell Lady Scatcherd to send for a rival, Dr. Fillgrave.

"The doctor descends the stairs, delivers the message to Lady Scatcherd, and a messenger is sent off for the new medical adviser. But as the doctor is leaving the house, an upper window opens, and he is called back as a friend and asked to give the patient advice about his will. This is of a nature to detain him for some time, give him food for reflection, and bring him back the next day. In the meantime the mesage has been delivered to Dr. Fillgrave's house, but the gentleman being miles away visiting another case, and returning late, the visit to the new patient, Sir Roger, is postponed till morning. I wish that I had time to tell you the complicated questions involved in the will, but it is immaterial, and all that we have to understand is that when the two medical gentlemen met at Sir Roger's house, the one came as his newly invited medical adviser, and the other as an old friend and financial adviser. In the meantime, Sir Roger, having upon consideration taken Dr. Thorne's advice and let the bottle partly alone, ceases to be in need of further medical attention, and falls into a violent temper upon learning that his direction of the previous evening had been so faithfully fulfilled, and Dr. Fillgrave is in attendance. Now I'll read, if you'll listen, and I'll make it as brief as I can by omitting nonessentials, but Trollope is so careful a workman that there is very little padding in his stories.

> "It was hardly yet nine o'clock when the postboy somewhat loudly rang the bell at Sir Roger's door; and then Dr. Fillgrave, for the first time found himself in the new grand hall of Baxall Hill House.
>
> "I'll tell my Lady, said the servant, showing him into the grand dining room; and there for some fifteen or twenty minutes Dr. Fillgrave walked up and down the length of the Turkey carpet, all alone.
>
> " * * * he walked up and down the room for a while with an easy jaunty step, with his hands joined together behind his back, calculating the price of the furniture, and counting the heads which might be adequately entertained in a room of such noble proportions. But in seven or eight minutes an air of impatience might be seen to suffuse his face. Why could he not be shown up into the sick man's room? What necessity could there be for keeping him there, as though he were some apothecary with a box of leeches in his pocket? He then rang the bell, perhaps a little violently.

"'Does Sir Roger know that I am here?' he asked the servant.

"'I'll tell my Lady,' said the man, again vanishing.

"For five minutes more he walked up and down, calculating no longer the value of the furniture, but rather that of his own importance. He was not wont to be kept waiting in this way * * * * When one is impatient, five minutes is as the duration of all time, and a quarter of an hour is eternity. At the end of twenty minutes, the step of Dr. Fillgrave, up and down the room had become very quick, and he had just made up his mind that he would not stay there all day to the serious detriment, perhaps fatal injury, of his other expectant patients. His hand was again upon the bell, and was about to be used with vigor, when the door opened and Lady Scatcherd entered."

At this point the reader stopped and explained that so soon as she heard that Dr. Fillgrave had arrived, knowing that he was not wanted, and that her husband would be violently angry at his presence, she had entered into a conspiracy with the servants to get rid of him. The latter counselled, that as the master had sent for him, it would be well to send the doctor up-stairs for the Baronet to row with, but Lady Scatcherd finally concluded to undertake to get rid of him herself, first, however, interviewing her lord and master as to the necessary steps to be taken. His only recommendation did not help her much, for the baronet suggested that the quickest way would be to "Put him under the pump." It was from that unkind interview that Lady Scatcherd came when the "door opened and Lady Scatcherd entered."

"As the door opened, Dr. Fillgrave dropped the bell rope which was in his hand, and bowed low to the lady. Those who knew the doctor would have known that he was not well pleased. It was as much as though he said, 'Lady Scatcherd, I am your most obedient humble servant. At any rate it appears that it is your pleasure to treat me as such.'

"Lady Scatcherd did not understand all this; but she perceived at once that the man was angry.

"'I hope Sir Roger does not find himself worse,' said the doctor. The morning is getting on; shall I step up and see him at once * * * * ?'

"Lady Scatcherd saw that she had nothing for it but to make the whole matter intelligible* * * * *'Yes, Dr. Fillgrave, when a man like he gets well, he can't abide the idea of doctors. Now, yesterday he was all for sending for you; but to-day he comes to hisself, and don't seem to want no doctor at all.'* * * *"Then did Dr. Fillgrave seem to grow out of his boots, so suddenly did he take upon himself sundry modes of expansive attitude,—to grow out of his boots and to swell upwards, till his angry eyes almost looked down upon Lady Scatcherd, and each erect hair bristled up toward the heavens. 'This is very singular, very singular, Lady Scatcherd; very singular, indeed; very singular; quite unusual. I have come here from Barchester, at some considerable inconvenience, at some very considerable inconvenience, I may say, to my regular patients; and,—and,—and,—I don't know that anything so very singular ever occurred to me before.'

"Upon this Lady Scatcherd bethought her of her great panacea. 'It isn't about the money, you know, Doctor,' she said. Of course Sir Roger don't expect you to come here with post horses for nothing.* * * * It ain't at all about the money, doctor;' and then she tendered the bank note which she thought would immediately make all things smooth* * * * * *Now Dr. Fillgrave dearly loved a five-pound note. What physician is so unnatural as not to love it? He dearly loved a five-pound fee; but he loved his dignity better. * * * * * *At that moment his outraged dignity and his cherished anger were worth more to him than a five-pound note. He looked at it with wistful but still averted eyes, and then sternly refused the tender.

"'No, madam,' said he; 'no, no;' and with his right hand raised, and with his eyeglasses in it, he motioned away the tempting paper."

The reader paused again, and explained that several pages were taken up in describing the lady's desire to have the doctor take the money he so much wanted, and the doctor's continual refusal of it upon the grounds of his loss of dignity, which ends with his statement:—

"'Utterly out of the question,' said Dr. Fillgrave, with great deliberation, as he backed his way into the hall. As he did so, of course he turned around,—and he found himself almost in the arms of Dr. Thorne.

"Dr. Thorne stepped back three steps and took his hat from his head, having, in the passage from the hall door to the dining room, hitherto omitted to do so. It must be borne in mind that he had no conception whatever that Sir Roger had declined to see the physician for whom he had sent; none whatever that that physican was now about to return, feeless, to Barchester.

"Dr. Thorne and Dr. Fillgrave were doubtless well-known enemies. All the world of Barchester, and all that portion of the world of London which is concerned with the lancet and the scalping knife, were well aware of this. They were continually writing against one another, continually speaking against each other; but yet they had never hitherto come to that positive personal collision which is held to justify a cut direct. They very rarely saw each other; and when they did meet, it was in some casual way in the streets of Barchester or elsewhere, and on such occasions their habit had been to bow with very cold propriety.

"On the present occasion Dr. Thorne of course felt that Dr. Fillgrave had the whip hand of him; and with a sort of manly feeling on such a point, he conceived it to be the most compatible with his own dignity to show, under such circumstances, more than his usual courtesy—something amounting almost to cordiality. He had been supplanted in the house of this rich, eccentric railway baronet, and he would show that he bore no malice on that account. So he smiled blandly as he took off his hat, and in a civil speech he expressed a hope that Dr. Fillgrave had not found his patient to be in any very unfavorable state.

"Here was an aggravation to the already lacerated feelings of the injured man. He had been brought thither to be scoffed and scorned at; that he might be a laughingstock to his enemies, and food for mirth to the evil-minded. He swelled with noble anger till he would have burst, had it not been for the opportune padding of his frock coat.

"'Sir,' said he, 'Sir!' And he could hardly get his lips open to give vent to the tumult of his heart. Perhaps he was not wrong; for it may be that his lips were more eloquent than would have been his words.

"'What's the matter?' said Dr. Thorne, opening his eyes wide, and addressing Lady Scatcherd over the head and across the hairs of the irritated man below him. 'What on earth is the matter? Is anything wrong with Sir Roger?'

"'Oh laws, Doctor!' said her ladyship, 'oh, laws! I'm [illegible] it ain't my fault. Here's Dr. Fillgrave in a taking and I'm quite ready to pay him; quite. If a man gets paid, what more can he want?' And she again held out the five-pound note over Dr. Fillgrave's head.

"'Madam,' said he again turning round to Lady Scatcherd, 'I was never before treated in such a way in any house in Barsetshire, never,—never.'

"'Good heavens, Dr. Fillgrave!' said he of Greshamsbury, 'what's the matter?'

"'I'll let you know what the matter is sir?' said he, turning round again as quickly as before. 'I'll let you know what is the matter. I'll publish this, sir, to the medical world;' and as he shrieked out the words of the threat, he stood on tip-toes and brandished his eyeglasses up almost into his enemy's face.

"'Don't be angry with Dr. Thorne,' said Lady Scatcherd. 'Anyways, you needn't be angry with him. If you must be angry with anybody—'

"'I shall be angry with him, madam,' ejaculated Dr. Fillgrave, making another demipirouette. 'I am angry with him,—or rather, I despise him;' and completing the circle, Dr. Fillgrave again brought himself around in full front of his foe.

"Dr. Thorne raised his eyebrows and looked inquiringly at Lady Scatcherd; but there was a quiet sarcastic motion round his mouth which by no means had the effect of throwing oil on the troubled waters.

"'I'll publish the whole of this transaction to the medical world, Dr. Thorne—the whole of it; and if that has not the effect of rescuing the people of Greshamsbury out of your hands, then,—then,—then, I don't know what will. Is my carriage—that is, post chaise—there?' and Dr. Fillgrave, speaking very loudly, turned majestically to one of the servants.

"'What have I done to you, Dr. Fillgrave?' said Dr. Thorne, now absolutely laughing, 'that you should determine to take the bread out of my mouth? I'm not interfering with your patient. I have come here simply with reference to money matters appertaining to Sir Roger.'

"'Money matters! Very well,—very well; money matters! That is your idea of medical practice? Very well,—very well. Is my post chaise at the door? I'll publish it all to the medical world,—every word,—every word of it,—every word of it.'

"'Publish what, you unreasonable man?'

"'Man; sir; whom do you call a man? I'll let you know whether I'm a man. Post chaise there!'

"'Don't 'ee call him names now, doctor; don't 'ee, pray don't 'ee,' said Lady Scatcherd.

"By this time they had all got somewhat nearer the hall door; but the Scatcherd retainers were too fond of the row to absent themselves willingly at Dr. Fillgrave's bidding, and it did not appear that any one went in search of the post chaise.

"'Man! sir! I'll let you know what it is to speak to me in that style. I think sir, you hardly know who I am.'

"'All that I know of you at present is, that you are my friend Sir Roger's physician, and I cannot conceive what has occurred to make you so angry.'

"And as he spoke, Dr. Thorne looked carefully at him to see whether that pump discipline had in truth been applied. There were no signs whatever that cold water had been poured upon Dr. Fillgrave.

"'My post chaise; is my post chaise there?' The medical world shall know all; you may be sure sir, the medical world shall know all;' and thus ordering his post chaise and threatening Dr. Thorne with the medical world, Dr. Fillgrave made his way to the door.

"But the moment he put on his hat, he returned. 'No, madam,' said he, 'No; it is quite out of the question. Such an affair is not to be arranged by such means. I'll publish it all to the medical world;—post chaise there!' "And using all his force, he flung as far as he could into the hall, a light bit of paper It fell at Dr. Thorne's feet, who, raising it, found that it was a five-pound note.

"'I put it into his hat just while he was in his tantrum,' said Lady Scatcherd; 'and I thought that perhaps he would not find it till he got to Barchester. Well, I wish he'd been paid, certainly, although Sir Roger wouldn't see him.' And in this manner Dr. Thorne got some glimpses into the cause of the great offense.

"'I wonder whether Sir Roger will see me?' said he, laughing."

A PARABLE

The Caliph Harun-al-Rashid, on one of his night sallies through the streets of Bagdad, heard the sound of a loud, excited voice, crying: "You saved my life! I'll never forget you! You saved my life!" Entering with his followers, he found the voice proceeded from one who had been very sick and who thus was addressing his physician.

A few nights later, passing by the same house, he heard groans proceeding from someone lying upon the street, whose clothes were rent and body bruised with blows. The victim proved to be a physician, who said he had been beaten and thrown out of doors when he requested a payment from the patient who had shortly before hailed him as his savior. The Prince of the Faithful, stroking his beard, meditated and ejaculated: "Verily it appeareth that saviors are poor collectors!"

Dr. O. Pine queries: "What so fading as the gratitude of convalescence?"

Diogenes, while on his lantern expedition in Athens, was accosted by a curious citizen who said: "What! Still looking for an honest man?" "Oh, no!" said Diogenes, "I have not arrived at that stage yet. I am looking for someone who is looking for an honest man."

Dr. O. Pine queries: To whom does the brother refer who, in castigating delinquency and inefficiency in the medical profession, suavely protests that he does not have in mind the American Medico, who is the peer or superior of all medicos anywhere else? Is he attacking the professionals in Patagonia or Ashantee, or is he merely tossing an oratorical beefsteak to pacify some hyenas who may be lurking among his auditors? Are the absent always wrong, and the present always right?

JAILED "TOOT SWEET"

"What's the charge, officer?"

"Fragrancy, your honor. He's been drinking perfume."—*Pelican.*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

FIDELITY

A suit for alleged malpractice entered against one of our members in 1912 has just been successfully closed by a judgment of *non pros* against the plaintiff for his unreasonable delay. The attorney retained on the case by our Society in 1912 and still "on the job" in 1922, presented the proper petition to the court, arguing the case with the above mentioned resultant disposal. A review of the case discloses the fact that the defendant has not communicated regarding the case since 1917, evidencing thereby perfect confidence in the management of his defense by our medical defense fund.

POSTGRADUATE WORK

The 1921 House of Delegates adopted a resolution instructing designated officers or committee to initiate negotiations with the Graduate School of Medicine of the University of Pennsylvania for the preparation of a program of state-wide university extension postgraduate work in the winter of 1922 and 1923.

Such committee was appointed from the Board of Trustees at their December 12th meeting, and at the May 2d meeting, this committee's report was unanimously adopted and favorably recommended to the 1922 House of Delegates. The plan as recommended after conference with representatives of the only graduate school of medicine in the state, the University of Pennsylvania, operates through extension groups of physicians formed at favorable localities under the joint auspices of county medical societies and the Graduate School. The time involved for the course of study leading to the granting of an appropriate certificate will be about two years, with weekly meetings. The extension courses are to be conducted in hospitals and other institutions wherever suitable clinical material and facilities are to be found. Groups providing patients for any teaching session will be expected to prepare in advance all necessary histories, laboratory reports, and when possible, tentative clinical conclusions. The University will be responsible for sending to each of the extension loci a series of competent teachers, whose morning will be devoted to a review of the cases in preparation for the afternoon session with the group. Each extension group will include a minimum number known as the guarantors of the actual expense connected with each day's travel and work on the part of the day's teacher.

University extension work along other lines has been popularized in many cities and it would appear that the time is ripe to include clinical medicine. We feel sure that the manifest advantages offered by such a plan as that which is herewith sketched will meet with the approval and support of doctors of medicine of all ages and in many counties, and we trust that your Delegates to the Scranton Session will be instructed to express your views at the proper time.

On June 23, under the auspices of the Westmoreland County Medical Society, Drs. John B. Carnett and Joseph A. Sailer, of Philadelphia, conducted a clinic at the Greensburg Hospital, which was most instructive and most thoroughly appreciated. This session at Greensburg was but a forerunner of those which may be made available for many centers *week after week* for a total of two years.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since May 19. Figures in first column indicate county society numbers; second column, State Society numbers:

May 20	Luzerne	220	7036	$5.00
	Montgomery	155	7037	5.00
	Lackawanna	181–185	7038–7042	25.00
	Wayne	25	7043	5.00
23	Northampton	135	7044	5.00
	Luzerne	213, 221	7045–7046	10.00
24	Lycoming	113	7047	5.00
	Franklin	49–50	7048–7049	10.00
	Blair	86–87	7050–7051	10.00
25	Somerset	44	7052	5.00
26	Philadelphia	1901–1930	7053–7082	150.00
	Erie	128–131	7083–7086	20.00
	Franklin	51–52	7087–7088	10.00
31	Allegheny	1179–1185	7089–7095	35.00
June 5	Cambria	127	7096	5.00
	McKean	40	7097	5.00
7	Center	26	7098	5.00
	Juniata	11	7099	5.00
	McKean	41	7100	5.00
9	Crawford	53	7101	5.00
10	Beaver	62	7102	5.00
12	Huntingdon	39	7103	5.00
13	Armstrong	58	7104	5.00
	Cambria	128–129	7105–7106	10.00
15	Lancaster	129	7107	5.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to June 20:

Allegheny: *New Members*—Ferdinand L. Benz, 225 Bessemer Bldg.; John N. Frederick, 652 Southern Ave.; Paul G. L. Hoch, State Penitentiary, Pittsburgh; Carl J. Scheffer, 527 Jackson St., N. S. Pittsburgh; Gilbert G. Long, 2115 Noble Ave., Swissvale. *Deaths*—Russell H. Boggs (Univ. of Pittsburgh, '97), of Pittsburgh, June 2, aged 49; J. Chris Lange, of Pittsburgh (Bellevue Hos. Med. Coll., '75), June 7, aged 67; Paul B. Doyle, of Pittsburgh (Univ. of Pittsburgh, '97), June 6, aged 48.

Armstrong: *New Member*—William H. Farah, Yatesboro.

Bucks: *Transfer*—Edward Y. Rich, Marietta, to Cumberland County Society.

Blair: *Reinstated Member*—Carey C. Bradin, Tyrone.

Cambria: *New Members*—Harry F. Gockley, South Fork; Filippe Sunseri, 546 Washington St., Johnstown.

Carbon: *Death*—Jacob H. Behler (Jeff. Med. Coll., '91), of Nesquehoning, recently, aged 57.

Chester: *Death*—Joseph T. Rothrock (Univ. of Penna., '68), of West Chester, June 12, aged 83.

Clearfield: *Death*—Michael E. Hurd (Jeff. Med. Coll., '83), of Mahaffey, recently, aged 70.

Columbia: *Removal*—Clark S. Long, from Benton to Lansdale (Montgomery Co.).

Crawford: *New Member*—Elmer P. Cuthbert, Titusville. *Transfer*—Theodore A. Little, Erie, to Erie County Society.

Delaware: *Death*—Jonathan L. Forwood (Univ. of Penna., '57), of Chester, June 4.

Erie: *Reinstated Member*—Abraham Kalson, 222 W. Eighth St., Erie. *Removal*—Harry H. Olds, from Wesleyville to California (Wash. Co.).

Franklin: *Reinstated Member*—Robert B. Varden. Mercersburg. *Removal*—George O. Keck, from Mont Alto to Greenville (Mercer Co.). *Death*—David F. Unger (Bellevue Hos. Med. Coll., '69), of Mercersburg, recently, aged 79.

Huntingdon: *New Member*—Frank Guillard, Saxton (Bedford Co.). *Transfer*—Earl Spence Duncan, Tarentum, to Allegheny County Society. *Removal*—Henry Bley, from East Mauch Chunk to Hamburg (Berks Co.).

Indiana: *Removal*—Charles H. Bee, from Marion Center to Indiana.

Jefferson: *Death*—John K. Brown (Jeff. Med. Coll., '84), of Brookville, April 27, aged 63.

Lackawanna: *New Members*—John H. Allwein, Real Estate Exchange Bldg., Scranton; Ralph H. Armstrong, Peckville; W. J. Corcoran, Old Forge.

Lancaster: *New Member*—Charles S. Duttenhofer, New Holland.

Lebanon: *Death*—William R. Roedel (Univ. of Penna., '95), of Lebanon, recently, aged 63.

Lehigh: *Removal*—William A. Backenstoe, from Emaus to Edwaleni, Alfred Co., Natal, So. Africa.

Luzerne: *New Member*—Merle F. Bossert, Wilkes-Barre City Hospital, Wilkes-Barre. *Transfer*—Frank B. Gryczka, Reading, from Berks County Society.

Mercer: *Removal*—Harry Kusmin, from Farrell to 2326 Eldridge St., Pittsburgh.

Montgomery: *New Member*—David B. Moyer, Hatfield. *Removal*—William Parkinson, from Conshohocken to 1729 N. Edgewood St., Philadelphia; John Rouse, from Ogontz to Fox Chase.

Northampton: *New Member*—Floyd W. Uhler, Pen Argyl. *Removal*—Raymond H. Bloss, from Bethlehem to Pocono Pines (Monroe County). *Death*—Rollo H. Hoey (Univ. of Penna., '09), of Easton, recently, aged 38.

Philadelphia: *New Members*—Frieda Baumann, 107 So. 21st St.; William P. Belk, 4511 Springfield Ave.; Harry A. Bogaw, 1806 So. 18th St.; Harriett T. Carswell, 2014 Walnut St.; Oscar J. Cooper, 676 N. 13th St.; John I. Fanz, Tenth and Walnut Sts.; Alexander G. Fewell, 4207 Chester Ave.; Samuel W. Hamilton, Byberry; James C, Harding, 5909 Greenway Ave.; Frederick W. Ninde, 257 High St., Gtn.; Aaron Rivhees, 2128 S. Fourth St.; Henry F. Smyth, 307 N. Wayne Ave., Wayne; John M. Weber, 2531 W. Columbia Ave., Philadelphia.

Sullivan: *Removal*—C. M. Bradford, from Forksville to Canton (Bradford Co.).

Union: *Removal*—Mary M. Wolfe, from Lewisburg to Penna. Village, Laurelton; Edith Matzke, from Wayne to Univ. of Missouri, Columbia, Mo., Box 45.

Venango: *Transfer*—Walter R. Livingston, State Institute, Polk, formerly of Ellsworth, from Washington County Society.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg, Pa.

DISTRICT CENSORIAL MEETINGS

During the past six months many censorial meetings have been held in different sections of the state. These meetings proved a distinct advantage in following the by-laws of the State Society which provides that at least once every two years a district meeting is to be held in each censorial district.

The programs presented at these meetings have been of a scientific as well as of a business character. The scientific papers presented have been by men outside of the districts and the business discussions have dealt with affairs as they relate to the work of the organization and also with legislation. Those who have attended these meetings have been well repaid for the time and effort spent, and it is hardly possible by a discussion at this time to demonstrate to those who have not attended, the good that comes from such meetings. However, it is very evident that there is a revival of interest in the advancement of medical science among the members in rural districts, as has been illustrated in the discussions at these meetings. A keen interest has been shown in the legislative matters that will be brought to the attention of the profession during the legislative session of 1923, and it seems that the members of our societies are keenly awake to the dangers that have threatened and still threaten the medical profession of the state.

THE FUNDUS CHANGES IN NEPHRITIS

Examination of a considerable number of cases has convinced Joseph L. Behan, Brooklyn (*Journal A. M. A.*, June 10, 1922), that the eye is no index to kidney damage in the sense used by Moschcowitz. Sclerosis of the retinal vessels represents the evidence of nature's defense, rather than a causative factor in the production of retinitis. The cause of the kidney pathology is the cause of the eye change. The ocular pathology does not exist because of the kidney change any more than the nephritis is the result of the eye change.

County Medical Societies

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

July, 1922

COUNTY SOCIETY REPORTS

ALLEGHENY—MAY

The regular monthly scientific meeting of the Allegheny County Medical Society was held on May 16, 1922, 8:30 p.m., at the Chamber of Commerce Auditorium, Pittsburgh, Pa., with the president, Dr. Carey J. Vaux, in the chair. Attendance: 119.

Dr. C. C. Wholey, in his paper, A Comparison of Hysterical and Epileptic Manifestations, after citing a case in which both hysterical and epileptic symptoms of a psychic character were present in a manner which made diagnosis difficult, emphasized the following points as being of significance in representing essential differences between hysteria and epilepsy: Epilepsy manifests itself in infancy and early childhood before and independently of the development of the higher mental faculties. Hysteria on the other hand does not appear until these higher mental faculties are developed. It rarely occurs before puberty. Epilepsy is an involuntary manifestation; in hysteria there is a conscious or unconscious volitional element. In epilepsy consciousness is either abolished or clouded to some extent; in hysteria the more pronounced symptoms may exist along with a clear state of consciousness. Epilepsy is essentially a dementing process, except in certain cases of the *petit mal* and psychic equivalent types; hysteria does not produce such mental deterioration. In epilepsy consciousness is always affected as a whole during some part of the attack; in hysteria there is only a fragmentary invasion of the psychic, corresponding to the paralyzed extremity, the deafness, aphonia or other symptoms. The severity of epilepsy varies in direct proportion to the degree with which it affects the deepest layer of consciousness—the autonomic system; hysteria is graver in proportion to the involvement of the high ex-psychical processes. Finally there is a marked difference in the manner in which the accumulated energy of the organism is handled in the two diseases. In epilepsy the avenues of discharge are blocked, resulting in a purposeless, distorted, more or less violent dissipation of energy which should have been utilized in a constructive orderly self-preservative manner. In hysteria energy is diverted, rather than blocked, into abnormal pathways and results in inadequate accomplishment of its purpose.

Chronic Appendicitis, by Dr. John A. Lichty: The reason for the practically 100% recoveries of the acute cases of appendicitis as shown in table I,

CASES OF ACUTE APPENDICITIS

	Operated	*Cured*	*Died*
Males	50	49	1
Females	35	34	1
Total ...	85	83	2
	Not Operated	*Apparently Well*	*Died*
Males	12	12	0
Females	23	23	0
Total ...	35	35	0

is because there was definite acute pathology which was promptly recognized and successfully removed. Of the two cases which died, one was a perforation which had occurred about three weeks before the patient was operated; a subphrenic abscess followed. The other developed a postoperative pneumonia. These cases, as well as the chronic cases, were operated by about 35 different surgeons. The reason for the unsatisfactory results among the chronic cases as shown in table II,

CASES OF CHRONIC APPENDICITIS

	Operated	*Cured*		*Died*
Males	159	125 (approximately)		4
Females	241	100	"	1
Total ...	400	225	"	5
	Not Operated	*Well*		*Died*
Males	459	(?)		0
Females	461	(?)		0
Total ...	920			0

can be seen more clearly if a certain classification or grouping of the patients will be followed. The patients suffering from a real chronic appendicitis or from a so-called "pseudo-appendicitis" will gradually arrange themselves into four groups. The term "gradually" is used advisedly and with a purpose, for it is not always possible to place the patient at once into the proper group. An operation may occur before the case is properly classified. But when all is known which can be known of a patient, it is usually found that the classification covers about all conditions. It is as follows:

Group 1. Those cases having definite pathology confined to the appendix and to its immediate surroundings. The pathology is of the nature already described for chronic appendicitis. The history is usually satisfactory in that there is rather definite evidence of preceding attacks. In these the results are almost invariably good. The patients recover their health following the operation.

Group 2. Those cases having definite pathology in the appendix, but which have in addition extensive adhesions about the cecum, possibly an adherent omentum, ptosis of the viscera with adhesions scattered here and there, such as at the hepatic flexure invading the gall bladder region, or about the pyloric region. The intestines are congested, the walls are thickened and give evidence of grave secondary pathology. In these the appendix may be removed and the adhesions broken, but the results naturally are not satisfactory and the symptoms usually continue. These are the cases with multiple operations, ten, twelve, or fourteen, occasionally ending in a partial or complete colectomy as practiced by Sir Arbuthnot Lane.

Group 3. Those cases having little or no pathology in the appendix, beyond an obliterating appendix. They present pronounced nervous symptoms. These do not improve, or if they do it is largely the result of the psychic effect.

Group 4. Those cases having no pathology of the appendix, but pathology in other organs, such as in the gall bladder, stomach, right kidney and right ureter, pelvic organs, pancreas, or elsewhere. These are usually the cases which result in a small abdominal incision through which the appendix is delivered, but which does not permit of careful exploration of the abdominal cavity. They are not surgical failures, but diagnostic mistakes.

It will be seen that in certain patients, such as those of Group 2, other treatment besides surgery is necessary. A long course of dietetic, medical, and hygienic care may be sufficient to restore health without an operation. Or if an operation is done such a course must often be followed persistently and intelligently as an after-treatment, before the cure is realized. These constitute a difficult group inasmuch as it is no easy matter to decide what course to pursue, and whatever course is undertaken the results are usually unsatisfactory. It requires the closest coöperation of the surgeon and the internist.

The cases constituting Group 3, those suffering from a neurosis, are particularly difficult, especially if they are so unfortunate as already to have been operated. The psychic effect of the operation is usually unfortunate and they drift into chronic invalidism. Occasionally however, the patient experiences such relief from the knowledge that he really has not had appendicitis, or that his appendix is not removed, that he immediately begins to make substantial improvement leading eventually to restored health. Of the 517 consecutive cases, collected from a general and consulting practice, which had already been operated for various conditions and in whom the complaints "after the operation were the same as before the operation," 243 had been operated for chronic appendicitis. Of the remainder 78 were operated for appendicitis and pelvic disease, 44 for appendicitis and gall bladder disease, 9 for appendicitis and gastric ulcer, 47 for gall bladder disease only, 40 for pelvic disease only, 16 for gastric ulcer only, and 39 for promiscuous cases including all kinds of operations. Table III:

OPERATIVE FAILURES

Chronic appendicitis	243
Chronic appendicitis and pelvic disease	78
Chronic appendicitis and gall bladder disease	44
Chronic appendicitis and peptic ulcer	9
Gall bladder disease	47
Pelvic disease	41
Peptic ulcer	16
Promiscuous cases	39
Total	517

Conclusions: 1. The diagnosis of chronic appendicitis is often beset with difficulties. 2. While surgery is the accepted treatment, the results are frequently unsatisfactory. 3. The comparatively satisfactory results following operation for acute appendicitis are convincing evidence of the necessity for a more careful study of the more or less acute conditions of the abdomen. Prevention of chronic appendicitis is easier than the cure. 4. Hospital statistics bearing upon the operative results of chronic appendicitis are unreliable, as the recovery from the operation is considered as synonymous with a cure. 5. In certain cases a course of medical treatment is necessary before a cure is realized. In other cases surgery may be contraindicated even though medical treatment affords only an approximate cure.

Dr. Lichty's paper was discussed by Dr. C. C. Wholey, who called attention to the fact that early cases of dementia præcox, and tabetic crisis may simulate chronic appendicitis. In susceptible cases neuroses may follow as a consequence of unnecessary operation. Dr. J. I. Johnston emphasized two points which were brought out by Dr. Lichty: 1. Diagnosis of chronic appendicitis is at times a very difficult matter. 2. Hesitancy about surgery. Dr. J. P. Griffith spoke of early recognition of pathology and its eradication.

Diphtheria Immunization, presented by Dr. Z. R. Scott. As a means of cure diphtheria antitoxin given early and in proper dosage, is remarkably successful, but it is not adequate to prevent the spread of the disease by way of the carrier. This can only be accomplished by detecting (by means of the Schick test) those who are susceptible and immunizing them with toxin-antitoxin mixture. It is recommended that, in order to simplify this work and bring it within the scope of every physician, all children between six months and six years of age be immunized. The interest and coöperation of the entire medical profession is essential if the people are to reap the full benefit of this modern preventive method.

Discussion on Dr. Scott's paper was opened by Dr. H. J. Bentz, who cautioned about the material used for the Schick test. He also spoke of the use of a control on opposite arm, in order to detect any pseudoreaction, should it occur.

The Relation that Should Exist Between the Pathologist, the Surgeon and the Internist, by Dr. V. L. Andrews. Because of the large number of biological and functional tests the pathologist's work is largely shifted to the wards and operating rooms. He thus comes in close contact with the surgeon, the internist and the patient. The pathologist should be given the opportunity to elicit his own history and make his own physical examination, for in many instances, in this way only, can he give a full interpretation of his laboratory findings. The internist must learn to interpret all laboratory findings as clinical symptoms expressed in terms of figures or letters and not as pain or loss of reflexes. Since, then, the pathologist is giving to the internist clinical data, is there any good reason why he should not be considered a specialist, a consultant, the same as the ophthalmologist, the neurologist and the others? Only when this is done will the maximum benefit be given the patient, the science of medicine advanced and the professional reputations of the parties concerned be preserved.

Essentials in Examination of a Genitourinary Patient, was presented by Dr. William C. Bryant. This paper is really a plea for a more careful examination of the genitourinary patient, especially by the general practitioner. The recent war emphasized the seriousness of the venereal peril. The U. S. Government, through the Public Health Service, is using every means possible to control the spread of venereal diseases. The following points were brought out: Inefficiency of prophylaxis practiced in civilian life is great as compared to its efficient practice under military supervision. Responsibility of the physician in making prompt and correct diagnoses. Error of prescribing for an urethal discharge without a microscopical examination. Importance of recognizing the fact that the presence or absence of spirochæta pallida cannot be made by the macroscopical appearance of a sore. Value of the dark field in making a diagnosis. Importance of making no applications of any kind, and especially the mercurials, to a venereal sore until after the dark field examination.

Tetany was presented by Dr. Benson A. Cohoe. Tetany, as a symptom complex, has been described by clinicians since the time of Hippocrates. The first scientific studies of the condition were made during an epidemic in Paris in 1850, as a result of which Corvisart introduced the name "tetany," and Trousseau discovered the possibility of artificially eliciting the characteristic contracture position of the hand. Later in Billroth's clinic (1880) researches were undertaken which demonstrated that tetany following strumectomy is due not to a loss of thyroid function, but to the loss of function of the parathyroid glands, simultaneously removed. Subsequent studies appeared to establish the identity of experimental tetany in animals with human tetany and to warrant the assumption that all of the various clinical forms of tetany have a common basis in parathyroid insufficiency.

This hypothesis of the unity of all forms of tetany, postulated by Schultze (1895), has been the subject of considerable criticism recently. In cases of tetany following thyroidectomy the factor of parathyroid insufficiency seems clearly established. Postmortem studies of the parathyroid glands in other forms of tetany have in some instances shown lesions, usually hemorrhages, but more frequently no anatomical lesion could be demonstrated, and in such cases a purely functional insufficiency of the glands had to be assumed. MacCallum and Voegtlin (1909) formulated the hypothesis that the parathyroids in some way control calcium metabolism in the body. In experimental tetany they found a marked reduction in the calcium content of the tissues, especially that of the blood serum and brain, accompanied by an increased output of calcium and nitrogen. They further showed that the intravenous injection of calcium lactate controls parathyroid tetany. Howland in a series of clinical studies found a reduction of over 40% of the normal calcium content in patients with tetany of idiopathic origin. He concluded that convulsions may be expected when the calcium content is less than 7 mg. for each 100 c.c. of blood serum. He does not, however, consider a reduction in calcium as the only factor in the causation of tetany, since he observed three instances of tetany following the intravenous injection of sodium bicarbonate in the treatment of acidosis due to diarrhea.

Noel Paton (1916) found that he could produce tetany by guanidin poisoning. From his researches he concluded that the parathyroids normally control guanidin metabolism and by so doing probably influence muscle tone. This author regards tetany as due to an increase of guanidin in the body. The adherents of this theory believe that the function of the parathyroids is to destroy guanidin and that the beneficial results following the administration of calcium in tetany may be attributable to a precipitation of these guanidin compounds.

More recently Grant and Goldman (1920), in a series of experiments performed upon themselves, have been able to produce tetany, with all of the classical symptoms by means of prolonged forced breathing. Their experiments apparently demonstrated that tetany may occur regularly as a feature of continued voluntary hyperpnea, resulting probably from a disturbance of the acid-base equilibrium in the body, since in their carefully controlled study the production of tetany was found to be accompanied by a fall in the alveolar carbon dioxide tension, an increase in the alkalinity of the blood and urine, and a reduction in the bicarbonate content of the plasma.

Following their report a number of clinical cases have been noted in which hyperpnea, or overventilation, has been found associated with tetany. Baker and Sprunt have lately reported a case of this kind of spontaneous attack of tetany during a paroxysm of hyperpnea, in a psychoneurotic patient convalescent from epidemic encephalitis. The writer has recently observed with Dr. A. H. Collwell a patient in whom cardiovascular symptoms were associated with recurring mild anginal attacks. During one of these attacks in which the mental excitation and marked tachypnea appeared out of proportion to the cardiac involvement, an attack of tetany developed, lasting about ten minutes, with bilateral spasm of the muscles of the hands and paresthesias in the lower extremities. In this case it seems conceivable that a disturbed acid-base equilibrium, resulting from overventilation, may have been the causative factor in the production of tetany.

Lester Hollander, M.D., per S. H. B., Reporter.

CHESTER—MAY

The regular monthly meeting of the Chester County Medical Society was held at the Chester County Hospital, Tuesday, May 16th, with President W. W. Betts in the chair.

Resolutions upon the death of Dr. Laban T. Bremerman, of Downingtown, prepared by the committee, Drs. Hutchinson, Pennell and Scattergood, were read before the society and accepted for publication in *The Medical Reporter.*

Dr. Horatio C. Wood, Jr., of Philadelphia, addressed the society on the Treatment of Circulatory Disorders, With Special Reference to Modern Pharmacotherapy.

It has been a long time since the society has enjoyed a more hearty discussion of the use of drugs which have fallen more or less into oblivion in the course of the recent trend towards the study of cases from a clinical and a pathological standpoint rather than a therapeutic and a personal standpoint.

Dr. Wood called attention to the fact that formerly in heart disease cases the question was asked: "Is there any injury to a valve?" whereas the question now is: "Is the heart able to do its work?" The causes of heart failure may be valvular lesions; but also there may be a severe degree of muscular weakness superinduced by some form of poisoning; or again, there may be insufficiency due to too great strain thrown upon the heart by arterial hypertension.

In studying a case of heart disease the main factors to be taken into consideration are: the cause of the disease, the degree of damage done, and the symptoms presented. The most important cause of heart inadequacy is increased tension of the vessels. This is recognized by the sphygmomanometer, but here it is essential to take into consideration the personal element in the case, for many persons habitually have a very abnormally high blood pressure without suffering any inconvenience.

There was at one time a theory that nephritis was the cause of high blood pressure. Now the converse is more often thought to be true. High blood pressure is often caused by poisons, but is also caused by severe and continuous nervous strain.

In the treatment of high blood pressure, or arterial hypertension, diet may be an important factor if it can be proved that the food eaten is definitely poisonous, but it is more important to determine rather the amount of food taken than the exact type. Many persons habitually overeat of comparatively simple food that they could easily digest if they were more abstemious. In a general way it is well to limit the intake of meats, and reduce the amount of salt intake in view of the fact that salt is a direct irritant to the kidneys in many instances. Also, foods that tend to produce flatulence and putrefaction in the intestinal tract should be avoided. Hot baths are of great value in selected cases, but this idea has been overworked in the past, and many patients have been utterly exhausted by too many hot baths. Catharsis is also overdone in many instances.

In the treatment of arterial hypertension by drugs the effort is made to decrease the work of the heart as far as possible. To this end the vasodilators in the form of sodium nitrite in one or two gr. doses every two hours, or nitroglycerine in small, frequently repeated doses are of value. In cases of arteriocapillary fibrosis the nitrites are found to have little effect because of the replacement of the unstriped muscle of the vessel walls with fibrous tissue.

Veratrum viride is a most valuable drug in the treatment of heart cases because its action is upon the vagus and slows the heart. This drug has fallen into disuse because of a belief at one time that it was a depressant to the heart muscle. Its beneficial effect is due to the slowing of the heart, and thus increasing the rest period. The criterion of the dosage of veratrum viride is the effect upon the patient as evidenced by the slowing of the heart. The average dose is 4-6 minims.

Nerve sedatives are of great value also in the reduction of high blood pressure. In this connection it is well to remember that psychic influences play a most important part in the elevation and the reduction of high pressure. Of the drugs, adalin or carbonal in 2 to 3 gr. doses is extremely beneficial.

In the treatment of heart weakness the most important therapeutic measure is *rest,* which must be both mental and physical. Of the drugs, digitalis is the most satisfactory. Its chief value is that it is a cardiac sedative. There is no increase in the tone of the heart muscle from the use of the drug even in actually toxic doses. The ordinary therapeutic doses slow the heart and lessen its irritability. It is particularly useful in auricular fibrillation. The dosage should be "enough to produce a slowing of the pulse rate." Quinidin is at times useful, but is dangerous in view of the fact that in its action on the auricle it allows the possibility for dislodgement of minute blood clots which have formed in the auricle walls.

Dr. Wood's address was discussed by Drs. Sharpless, Patrick, Jacobs, Bullock, Hughes and others, and in conclusion a warm vote of thanks was extended to Dr. Wood for his courtesy in addressing the society.

Henry Pleasants, Jr., Reporter.

COLUMBIA—MAY-JUNE

The Columbia County Medical Society met at the Acacia Club Rooms, Berwick, May 11th, and in the temporary absence of the president, Dr. F. R. Clark, was called to order by Vice-President H. S. Buckingham. The attendance at this meeting was considerably above the average, there being present 28 members and 5 visitors.

The ordinary routine business was quickly disposed of in order to allow ample time for Dr. G. W. Reese, Surgeon in Chief and Superintendent of the Shamokin State Hospital, to open the scientific program by the discussion of "Differential Diagnosis of Abdominal Conditions Attended with Colicy Pains." The Doctor, in his usual forcible, clear and impressive manner, evidenced his knowledge of and his familiarity with the various phases, symptoms and conditions to be considered and passed upon.

On request, Dr. R. A. Keilty, of the Geisinger Hospital, opened the general discussion. He was followed by Drs. Bruner, John Hensyl, Hower and others, with Dr. Reese in closing, answering questions, replying to comments and enlarging upon some points touched upon in the address.

The session was an interesting and profitable one throughout, closing with a vote of thanks and appreciation tendered to Dr. Reese.

The June meeting was held on Thursday, the 8th, at Hotel Magee, Bloomsburg. Following the dinner at the noon hour, at which Drs. J. C. Biddle and P. B. Mulligan, of Fountain Springs Hospital, were the welcome guests of the society, as also were Drs. P. C. Newbaker and J. H. Sandel, of Danville, the session was called to order by Vice-President H. S. Buckingham, with 22 members and 6 visitors present.

President F. R. Clark was unable to be present, due to the fact that he is in the hospital, recovering from a recent operation. The Doctor is a regular attendant, very seldom missing a meeting.

The speaker for the scientific feature of the meeting was Dr. Jonathan C. Biddle, Surgeon in Chief and Superintendent of Fountain Springs Hospital, Schuylkill County, who is well and favorably known in this section of the state. Dr. Biddle discussed "Bone Surgery, Fracture and Treatment of the Arm and Forearm" in a very practical and definite way, and illustrated the subject by x-ray pictures, in which he was assisted by Dr. P. B. Mulligan. The speaker exhibited pictures of more than a score of cases, in most of them showing pictures taken at the time of the injury and also after recovery of the fracture. The address was an able and instructive one throughout. The general discussion was opened by Dr. J. W. Bruner, and a large number of those present participated. Dr. Biddle, in closing, replied to many questions on the subject. A vote of thanks and appreciation was tendered him. L. B. KLINE, M.D., Reporter.

MIFFLIN—JUNE

The June meeting of the Mifflin County Medical Society was held in Lewistown, at the Coleman House, on June 1st, Dr. W. H. Kohler, of Milroy, presiding. The meeting was largely attended.

An announcement was made of the coming meeting of the Seventh Censorial District at Huntingdon, June 22d, at which Dr. J. P. Crozer Griffith, of Philadelphia, and Dr. Lawrence Litchfield, President-Elect of the State Society, will be the speakers. Dr. F. A. Rupp was recommended to the State Society as the censorial representative of Mifflin County. Drs. S. W. Swigart and C. J. Stambaugh were elected delegates to the Scranton Session in October.

A resolution was adopted unanimously amending the constitution of the local society and discontinuing the sending of monthly notices of the regular meetings to each member. Hereafter members will remember that the first Thursday of each month is the regular meeting day at a place to be designated by the president.

Dr. C. J. Stambaugh read a very able paper on the subject "Abdominal Pain." F. A. RUPP, Reporter.

NORTHAMPTON—MAY

The May meeting of the Northampton County Medical Society was held on May 19th, at Seip's Café, Easton, with the president, Dr. Delbert K. Santee, presiding.

The Tubercular Hospital Committee reported progress and that they were securing signatures at the present time.

Dr. W. P. Walker, chairman of the Committee on Revision of Constitution and By-Laws, made a partial report and said he hoped to make a full report at the June meeting. Decided progress has been made by this committee.

Dr. W. L. Estes, Sr., chairman of the Public Policy and Legislative Committee, made a report of their work in efforts to ascertain the thoughts of candidates for state offices on medical matters. Nearly all responded in a manner that shows their willingness to give due consideration to the "group mind" of the medical profession. One candidate, it appears, resented the questionnaire and was more or less impertinent.

On motion, the committee was instructed to keep actively on the job and asked to hold a special conference with the nominees for office before the fall election, to ascertain each others' viewpoints on matters in which we are all interested.

Dr. Estes, Sr., spoke on matters of public welfare, especially that pertaining to penal institutions. He spoke well of the work done by Dr. Kerschway throughout the states, calling him an "Apostle" in the initial endeavors to improve matters along this line. Dr. Baldy's work along this line was commended, and Dr. Estes made a motion, which was seconded by Dr. Thomason, that we endorse the principles of improving conditions in our penal or criminal institutions along lines of modern thought and teachings. The motion was carried. Dr. Estes thought it proper for us to invite Dr. Baldy to our next, or June, meeting, to give us information on this matter. By a motion of Dr. Estes, seconded by Dr. Tillman, the executive committee was instructed to arrange a program along this line for our next meeting, inviting Dr. Baldy and others, to address us, with the suggestion that we invite the nominees for office and the various legislative committees of the women's clubs of Easton and Bethlehem to be present to hear what is said on such matters. The motion carried.

The motion of Dr. Tillman that the secretary-treasurer be given a salary of $100.00 per year was seconded by Dr. Rosenberry and passed, this motion to be presented to the Committee on Revision of Constitution and By-Laws to be incorporated in their recommendations.

Dr. Edward Hart, of Lafayette College, when introduced by the president, received an ovation. His paper, "Medicine and Chemistry," was carefully prepared and well received. It follows:

The earliest form of medicine in the history of mankind grew from the idea that disease is caused by an evil spirit which must be frightened away by the medicine man disguised in hideous masks and producing hideous sounds. Gradually a knowledge of simple remedies—heat, vapor baths, mineral waters and herbs—grew up and took form, sometimes very droll form, and the infant medicine became ready for partnership with the infant chemistry, which extracted from drugs the active principle, discovered in mineral substances medicinal properties, and in later times prepared the thousand and one synthetic remedies now so largely used. In Pliny's "Historia Naturalis" innumerable remedies are mentioned, most of which could have done no possible harm and must have stimulated the imagination like a bread pill.

In that later time, when the alchemists were industriously searching for the philosopher's stone which would transmute the baser metals into gold and silver, the idea gradually took shape of a medicine which would prove a panacea, a remedy for all diseases, and at the same time be a renewer of youth. Sometimes it was thought this would be a separate substance, but usually it was supposed to be identical with the philosopher's stone. In many cases it is nearly impossible to tell just what the alchemical writers did know or mean. Many of their writings may be interpreted either as containing hidden meanings or as verbal emptiness. Some knowledge of human anatomy had come down from the Egyptians, and Galen had studied mammalian anatomy, systematized the knowledge of the time, and founded his doctrine of the temperaments. The progress that had been made had been mostly scholastic, and merely substituted one theory of disease for another. Very little knowledge had been added to the ancient stock, and the time was ripe for a change. This change came with Paracelsus early in the sixteenth century.

He called himself Theophrastus Paracelsus Bombastus von Hohenheim. His father, William Bombast, was, according to Van Helmont, a bastard of the Master of the Teutonic Knights, and so had a legitimate claim upon neither the name Bombast nor von Hohenheim. The name Paracelsus was probably an invention of his own to indicate his superiority to Celsus. Van Helmont says: "For he was there given to Venus. (Indeed a sow in a place where three ways met had gelded him.) Secondly, not to sloath, nor spent he his life in flattery, being earnestly desirous of knowledge."

Paracelsus was born at Einseideln in the Canton Schwyz. He learned the medicine of the time of his father, only to find it unsatisfying to his fiery spirit. He attended the University at Basel for a short time, studied the mystical chemistry of the time with Trithemius, and finally went to the Tyrol and became a disciple of Sigismund Fugger, a physician and alchemist of Schwatz. The family of the Fuggers were miners and smelters of silver and Sigismund was versed in all the real chemical knowledge of his day. Here for the first time Paracelsus found reality—facts which he could apply to practical medicine. In the restless search for knowledge, Van Helmont tells us, he became a great traveler and "applied himself indifferently to physicians, barbers, old women, conjurers and chemists both good and bad from all of which he gladly picked up anything that might be useful." He adopted the ideas of Hippocrates, who taught that the body contains four humors—blood, phlegm, yellow and black bile—which rightly proportioned bring health, and he laid great stress on the healing power of nature. Disease as well as health is governed by natural law and the symptoms must be noted and studied. The fine-spun theories of Galen and Avicenna the Arabian, he rejected, and when he came to lecture at Basel he publicly burned their books. He had learned the virtues of opium and its tincture to which he gave the name Laudanum, and the preparations of antimony and mercury which he used as remedies. In those days Latin was the language of the learned, and the lectures were of course given in Latin. With fine contempt for this prejudice he lectured in German, and most of his books are written in German. But Paracelsus did not stop here. He attacked the Galenists in filthy terms such as were not infrequently used then; he exposed their ignorance, pomposity and arrogance in unmeasured terms; he attacked the pharmacists and showed that they were in league with the physicians and were adulterating their drugs, and soon thoroughly aroused the vested interests. He was quite open to attack, as he led an irregular life, and was charged besides with the practice of the black art by his opponents, who soon filled his life with incidents. His real learning, however, attracted students in crowds, and led to a rapid extension of his system. His knowledge enabled him to cure a canon of Lichtenfels who (when he had recovered) thought 100 crowns was too high a price for three pills. Paracelsus took the case to a magistrate, who decided against him. Nothing daunted he attacked the judge and was obliged to fly from Basel. Thereafter he led a wandering life.

Paracelsus taught that matter is made up of three principles, salt, sulphur and mercury. These principles are not, however, identical with the actual salt, sulphur and mercury known to us. The human body is a microcosm corresponding to the macrocosm of the visible world. Life is a process of growth presided over by the Archæus or inner spirit. Most diseases nature can cure alone, but when the body is weary, drugs must be used as helps.

His ideas about the homunculus are curious: "But we must not forget," he says, "the generation of the homunculus, for there is some truth in it, although this has been considered a great secret and so far has been concealed; some of the old philosophers have had not a little doubt as to whether a man might be born outside the womb of a natural mother? To this I answer that this is not opposed to spagiric art or to nature, but is easily possible. In order to accomplish this we must place the semen of a man in a heat corresponding to that of a horse's belly and allow it to putrefy for forty days, or until it moves and becomes active, which is easily seen. After such a time it will have some resemblance to a man but will be transparent and without a body. After this it must be fed and nourished daily with the arcana of human blood for 40 weeks, always keeping it at the heat of a horse's belly, when it will become a real man child with all the members of an ordinary child born of woman, but smaller."

Paracelsus was more physician than chemist, but he did for both what Luther did for religion. He was the first physician who knew anything about chemistry. He made it his tool. Many of his successors—Van Helmont, Libavius, Boerhaave, Stahl and others—were chemists as well as physicians. During the seventeenth, eighteenth and nineteenth centuries most of the chemists were in some way connected with either medicine or pharmacy.

Paracelsus is not easy reading; one easily falls asleep. He is windy to the last degree, and had more than his fair share of conceit, but in these respects he is, perhaps, not worse than most of his contemporaries.

As illustrating the state of the art of medicine in 1677, I will extract a page or so from the book entitled "A Course of Chemistry. Containing the Easiest Manner of Performing Those Operations That Are in Use in Physick. Illustrated with Many Curious Remarks and Useful Discourses upon Each Operation. Writ in French by Monsieur Nicholas Lemery. Translated by Walter Harris, Doctor of Physick." On page 85 Harris says: "Quicksilver is one of the greatest remedies we have in Physick when it is used as it should be, but is full as dangerous when it happens into the hands of Quacks who use it upon all occasions for all sorts of diseases, and give it indifferently to all sorts of persons without any respect to the temperament they are of. Those who draw it out of mines, or work much with it, do often fall into the Palsie, by reason of sulphurs that continually steam from it; for these Sulphurs consisting of some gross parts do enter through the Pores of the Body, and fixing themselves rather in the Nerves by reason of their coldness than in the other Vessels, do stop the passage of the Spirits and hinder their course.

"Mercury is given in the disease called Miserere unto two or three pounds and is voided by siege to the same weight; it is better to take a great deal of it than a little, because a small quantity might be apt to stop in the circumvolutions of the Guts, and if some acid humors should happen to join with it, a *Sublimate Corrosive* would there be made; but when a large Quantity of it is taken, there's no need of fearing this Accident, because it passes quickly through by its own weight." Of antimony he says, that "If you melt it over again and form it into Bullets of the bigness of a Pill, you have a *Perpetual Pill,* that is to say such as being taken and voided fifty times will purge every time, and yet there's hardly any sensible diminution."

In 1757 Carl Wilhelm Scheele, the greatest chemist of his time and one of the greatest chemists of all time, entered the pharmacy of Martin Anders Bauch at Gothenberg. A list of the drugs contained in this pharmacy has survived. It comprised: snake fat, bears' and wolves' grease, men's heads prepared without fire, mummies, jaw of the pike, oil of tapeworm, powder of vipers, powder of the true wild ox horn, powder of the fossil wild ox and hoofs of the elk.

I think that even in the present enlightened age some nonsense has survived. When my oldest boy was quite small the family physician was called upon to prescribe for him on several occasions. At that time I lived on the corner of Monroe and Porter Streets, and the distance to the doctor's office had to be traveled afoot—there was no trolley line then. After one of these jaunts in the evening taken after a hard day's work, coupled with an hour's wait in the doctor's office, my inventiveness came into action. Most of the trips were after powdered oyster shell which the physician assured me was more useful as an antacid than anything he had ever used. He took care to give me a very small supply which occasioned many trips. One morning I was admonished to get some more oyster shell. We had some beautiful calcite in the laboratory and I powdered some of it very carefully in a Wedgewood mortar, did it up in neatly folded papers and handed one out on my return home. It was received unsuspiciously and appeared to work perfectly. I continued in this course of criminal practice for over a year without detection. Only the fear of a hereafter and the necessity of eleventh hour conversion induces me to confess now.

We must all grow from infants to men by a process of development, and none of us can escape some follies which must be forgiven and forgotten. This is just as true of the sciences of medicine and chemistry. Most of you have witnessed the growth and decay of such notions, and the oldest of us many such. If I were to attempt to recite those of chemistry which have been born and died in my own time there would be room for nothing more. These are the growing pains of juvenility and mark all progress. Our gaze must be concentrated on the future. I have always been an optimist and I think this the true philosophy. If your science and mine are still far from perfection, this should merely encourage us to stronger endeavor. The call to service is all-embracing. It has always been a powerful one with the doctor, especially with the country doctor who must be out in all weather, lose sleep, health and life in the service of those who regard such service as a matter of course. He must be consoler and comforter, confidant, adviser, spiritual director and creditor of thousands. His reward is that of the teacher: a word of encouragement at rare intervals, an abiding consciousness of work well and faithfully done and occasionally enough money to pay his debts. When he dies, if he has been faithful, he is sadly missed. There are wet eyes and sad hearts in many homes. Dr. Traill Green, and Dr. De Will, who recently went to his reward, were such men, and any one of you may be content to leave such a memory of long years and faithful service to his fellows.

In my own time I have seen a complete transformation in chemistry. From a little known and appreciated beginning it has grown into a mighty power. Those of you who are as old as I have seen as great changes in medicine. We all thank God that alum and molasses are no longer given for croup, that we can have all the water we want when we are feverish, that water-borne diseases need no longer decimate us, that diphtheria and tuberculosis and rabies are curable and for the wonderful progress in surgery. I think there is no other profession requiring such a wide knowledge of so many things and such a profound knowledge of a few things as that of medicine. The opportunity is correspondingly great. If you should become discouraged remember that the accumulation of great wealth or the bestowal of honors is not the mark of a successful career. The man of brains will make his mark anywhere and anyhow, provided he have a kind heart. Such men will always be rare, always appreciated and always regretted.

I have told you that medicine and chemistry have been closely allied since early times; it is not necessary to say that this is still true, for it is evident that this alliance becomes closer every day.

William A. Finady, M.D., Reporter.

PHILADELPHIA

April 12th

The president, Dr. J. Norman Henry, in the chair. *A Case of Submental Actinomycosis* was presented by Dr. P. G. Skillern, Jr. The patient had had a submental nodule the size of a walnut, which, when incised, yielded a few drops of colon-like pus, a hard area remaining. The ray fungus was found in the pus and treatment with the iodides begun. At present a limited nodule the size of a pea remains.

MEDICOLEGAL SYMPOSIUM

The Relation of the District Attorney's Office to the Medical Profession: Chas. Edwin Fox, Esq., Assistant District Attorney (by invitation).

Mr. Fox began his paper by saying that for the last three years he has been in contact with the medical profession, and it was upon one particular contact that he would mainly speak—the prosecution of abortion cases. He said that there is a general tendency on the part of physicians to be reluctant to be brought in in any phase of prosecution in cases of criminal abortion. There is a lack of a knowledge of the fundamentals in these cases. The members of the profession are unaware that the death of the woman need not eventuate to have the crime complete. Many criminal abortionists are able to continue because the physician who subsequently attends the patient will not enter prosecution if the woman recovers. The doctor frequently hesitates to advise initiation of prosecution because he fears that the woman will get into trouble. The woman is not an accomplice.

The difficult cases are those in which death has resulted. The general rule of testimony requires the witness to appear in person and be subject to cross-examination, but there is a statute which allows the dying statement to be used as evidence. In securing such a statement it must be taken under such circumstances as will demonstrate that the woman was in sound mind, and it must show that the woman was definitely warned of impending death. With those two points made, the statement may be as informal as circumstances may permit. A case can be won on a dying statement together with a testimony that a postmortem showed evidence of aborting methods. Coöperation of the physician must be stressed.

Mr. Fox then went on to discuss the case of Wm. H. Bricker, whose conviction was secured by the prosecuting district attorney without a dying statement. Such cases, he said, are unusual.

He said also that, without the coöperation of the medical profession, the efforts of the prosecuting officers are in vain, in bringing up quacks and doctors of various cults who have overstepped their licenses.

In *discussion* Dr. Morgan asked where is the first duty of a physician in reporting a case of death through criminal abortion—to the coroner's or district attorney's office. In reply Mr. Fox stated that a report to the district attorney's office, to the coroner's office or to the Detective Bureau would be followed up. In the city and county Detective Bureau there are two or three men who will take a satisfactory dying statement.

In the case of a declaration of an apparently dying woman who afterwards recovers, the dying statement may not be offered, but it is sufficient to hold her in testifying and may be used at least to refute her.

Dr. Robinson in referring to the Bricker case commented upon the present management of the penitentiary. He stated that the entertainment provided there is contrary to law.

Dr. D. J. McCarthy said that he thought the attitude of the doctor was not a lack of desire to enforce the law, but rather a reticence to drag before the public the name of a young girl who is going to get well. Frequently in those cases the moral suasion of the doctor does more good. In regard to the management of the penitentiary, Dr. McCarthy said that a two months' investigation by a committee had shown the prison exceptionally well run and that the humane methods were bringing good results.

Dr. Morgan asked whether or not cases of self-induced abortion should be reported, and the answer was, no. He brought out the fact that in cases where a physician feels that a woman is suffering from an abortion supposed to be criminally induced, he is responsible for filing that information, and at the same time he runs the danger of a suit for malpractice and also of defamation proceedings. In such cases he has always followed the plan of demanding from the woman a certificate stating her condition at the time of his taking the case, and of having her husband, if she is married, and another witness to sign it.

Ralph B. Evans, Esq., in continuing the discussion, said that if a physician reports a case and the charge proves unfounded (and such reports he would, as a physician, make to the district attorney's office), the courts would hold that such report was a privileged communication, which, if not made with malice, cannot be made subject for action for slander.

He then went on to speak of the relation of the medical profession to the administration of justice in the civil courts. Fifty per cent of the Philadelphia County Court's actions are accident cases, and in these cases the verdict is based on the testimony of a physician. He deplored the fact that experts called in to testify invariably testify to conditions more serious than those evidenced by the hospital records or by the evidence from residents or surgeons. He made a plea for expert testimony intelligently honest.

The Attitude of the Medical Society Relative to Illegal Practitioners: Dr. Henry D. Jump.

In the last few years there has been a rapidly growing unrest in regard to the increasing number of unlicensed practitioners. The osteopath has the stamp of approval of the state to practice his own particular form of healing. He appreciates the limitations of his practice and desires to administer drugs, but he has no knowledge of therapeutics and dosage. Credit must be given him that he has realized the limitations of osteopathy. There are about 600 chiropractors in the state, and to their credit be it said that they are at present honest in their desire to get through a bill for the licensure of a straight chiropractor. They deride admixers who use other than simple adjustment of the spine. Were they licensed they would soon hunt for excuses to use methods they now decry. Then there is the neuropath, who adjusts the spinal nerves at their point of exit, and the napropath, who combines the adjustment of ligaments with rolling for obese ladies. There is the mechanotherapist and the herb doctor and a number of others. Pennsylvania has become a dumping ground for those with new methods for the healing of the sick. The visible legal standard of medical practice in this state is high, but the law is not enforced. It is the duty of the Bureau of Medical Education and Licensure, as prescribed by law, to bring prosecution against such as those, who practice without license. The Department of Health at Harrisburg is qualified to find evidence and bring suit against unlicensed practitioners. The State Medical Society of itself cannot be the prosecuting body. Shall the profession wait for truth to prevail, until the public shall learn by cruel experience of the fallacy of false gods, or shall they play a part in ridding the state of fakers and improperly educated practitioners? The best ground for attack is their lack of knowledge of the fundamentals of the machine with which they deal. Dr. Jump then reminded the meeting of the bill which will come before the next legislature—the broad guage Medical Practice Act—and in closing, said that there are three ways to meet this problem of the unlicensed practitioner: 1, education of the people; 2, punishment of offenders; 3, provision of funds with which to hunt them down.

In *discussion* Dr. Geo. M. Piersol said that there is a distinct desire to coöperate in aiding the legal machinery in protecting the community, but also a natural disinclination to get mixed up with the law. In regard to expert testimony, he asked why there are not properly appointed experts attached to the courts. He said too, that the fundamental education of doctors solves all problems automatically, and prevents a type more likely to become undesirable. One of the main reasons for the unrest and drifting of the people lies in the doctors themselves. There must be education of the doctor and of the community—of the latter that it may send the right people to the legislature.

Dr. McCarthy urged as a panacea that the public be educated by the doctors, and asked how many graduates can give massage like the worst osteopaths. Nine-tenths of therapy consists in hygienic measures, winning the confidence of the patients, etc. Dr. McCarthy gave up work as an expert because of the rottenness of both plaintiff and defendant. The expert never was guilty of intellectual dishonesty until in contact with the law. More housecleaning is needed in law than in the medical profession. The courts are an intellectual game, with the judge as an umpire.

Dr. Swinthin Chandler spoke in defense of the expert. He thinks also that there ought to be some educated to assist men ideally trained in medicine.

April 26th

The president, Dr. J. Norman Henry, in the chair.

The Surgical Treatment of Sciatica: Dr. Wm. J. Taylor.

Dr. Taylor began his paper by remarking upon the lack of interest in the cases of chronic sciatica surgically treated, which have heretofore been reported.

May 27, 1920, there were presented four cases which had been operated upon, and at that time the opinion was expressed that sciatica was an evidence of sacroiliac trouble rather than an entity; that it was due to a lesion of the spine, sacroiliac joint or hip. However, there are a few cases due to the nerve itself, caused either by a neuritis, perineuritis or adhesions, and it is upon this type of case only that operation is advised. All cases are examined by x-ray, and none are operated upon if there is any evidence of spine, hip or intrapelvic trouble. The left sciatic region is the one most frequently involved. His cases have been those exposed to cold and dampness, to trauma, or to changes in temperature. In several instances they were engineers or firemen.

There are two types of chronic sciatica: 1, the neurotic, or pure neuralgic; 2, the neuritic, with inflammation of the sheath and involvement of the nerve fibres. The tendency toward sensory and vasomotor disturbances evidences nerve injury. The nerve trunk is frequently found to be increased in size and thickness, with a firm, translucent, gelatinous substance in the nerve sheath. Kenton has described three types of cases: 1, those free from pain when at rest, but who experience pain on exercise or on assuming a certain position; 2, those who have pain when at rest, the pain becoming intense on exertion; 3, those with an indefinite pain which may be less on exertion. The first class is the best for operation, for in these the inflammation has subsided but adhesions are present. Of the second class, many may be cured by operation, although the symptoms are due to inflammation of the nerve itself. In the third type operation is of no benefit.

The operation consists of the following steps: an incision is made from the gluteal fold down to the lowest painful point. The nerve is lifted up, but not stretched, and adhesions are dissected off with fingers, gauze or scissors. No branches are cut. The muscles are then readjusted and the skin (but not the fascia) sutured. No splint is applied, the patient is allowed up in a few days and all recorded cases so far have made uneventful recoveries. The operation brings almost certain relief.

Dr. Taylor then went on to report the nine cases upon which he has operated, all of which made complete recoveries. His tenth case is now in the hospital. There had been pain for three years, with tenderness over the sacroiliac joint. X-ray showed a possible deposit at one point. All other treatment had been tried without avail. The case went to operation and a small branch was found crossing the nerve on the outer side, running to the biceps. This was bound down by adhesions. There remains at present only a slight discomfort.

In *discussion* Dr. Morris J. Lewis stressed the fact that in true sciatica, which is infrequent, there is either a neuritis, a perineuritis, or both. The adhesions are delicate and cobwebby, less than would naturally be expected. In the operation no traction is made on the nerve. Dr. Lewis, too, deplored the lack of interest in the reports of these cases.

Dr. Musser asked whether or not patients with perineuritis show a loss of the Achilles' tendon reflex, and if so, whether or not it returns and how soon. Dr. Taylor, in reply, said that in cases where there is a distinct neuritis the reflex is not present. He could not answer the second part of the query. In reply to a question from Dr. Robinson as to the bearing on these cases of a focal infection, he said that although no focus of infection had been removed the cases recovered.

Ophthalmia Neonatorum: Dr. Louis Lehrfeld. Dr. Lehrfeld said that the main purpose of his paper was to arouse interest in the prevention of blindness. A large number of cases of ophthalmia neonatorum are due to the physician's failure to use prophylactic measures at the birth of the child. There are still the same number of children in homes for the blind from this cause as there were in 1913, when the disease was not reportable. Fuchs states that the incubation period is rarely as long as four to five days; if contracted later it is probably due to infection from soiled linen or from the hands of the mother. Rarely the incubation period may be two weeks, from a nonvirulent form of gonococcus present in the genitals of the mother. If, however, the disease is from the hands of the mother, why can it not be found in her?

A strong solution (1 to 2%) of silver nitrate frequently sets up an inflammation which may mask ophthalmia neonatorum. Dr. Lehrfeld advocates a prophylactic less irritating than silver nitrate (25% argyrol, for example) to be used on three successive days, followed by complete flushing out of the cul-de-sacs, using a bulb syringe. Twenty-three per cent of the cases in the Pennsylvania Institute for the Blind from 1912 to 1922 were due to ophthalmia neonatorum. Beside the above recommendation for prophylaxis, Dr. Lehrfeld also said that all expectant mothers should receive prenatal care, and that there should be added to the birth certificates a space for indicating the presence of sore eyes.

Review of the Work Accomplished by the State Medical Society and Its Plans for the Future: Dr. Frederick L. Van Sickle, Executive Secretary, Medical Society of the State of Pennsylvania.

Dr. Van Sickle began by saying that we can see what will effect the future of practitioners of the healing art if affairs roll on as they now are in legislative efforts. As "practitioners of the healing art" he defines anyone who follows any branch of effort toward treatment of disease—those who practice medicine, surgery, eye, ear, nose and throat, and midwifery; as a result of evolution, those who practice dentistry and pharmacy; nurses, and the newer branches, osteopathy and chiropractic. Pennsylvania laws are inadequate for the present conditions in relation to the healing art.

The Bureau of Medical Education and Licensure, consisting of five appointed and two ex officio members, has not enough police power or sufficient funds. Many are practicing medicine in Pennsylvania without a license. Many advertising dentists frequently employ undergraduates or other untrained assistants. Many osteopaths, although their advance requirements have made their position better than in the past, are violating the Medical Practice Act and are dispensing drugs and performing major operations. Chiropractors ought not be licensed, for few have the required preliminary and premedical qualifications. There are ten different branches of the healing art. Why not get them together, have one representative from each, with two ex officio members from the State Department, letting each have its own examining board? A closer relation between all branches would tend to increased coöperation in the prevention, treatment and cure of disease. The preliminary and premedical training should be the same for all, with no divergence until the question of therapy is reached. There is to be a change in the law advised by the Board in the "Healing Act Law of 1923." This provides for an enforcement department with sufficient number of employees to investigate the legal status of all the branches of the healing art. It provides for inspectors, for a board to enforce the act and for a board to prosecute.

The medical profession is apathetic. There is much to do to make the practice of the healing art of the future worth something. They must either help those trying to frame the new bill or stop contention with the legislature.

Discussion: In reply to Dr. Robinson's question as to whether there should be personal action taken in cases against the osteopaths, Dr. Van Sickle said that this could better be remedied by having a law to make all equally responsible and to lay their cards on the table. Pride would then keep the skirts of each branch clean. Better be constructive than obstructive.

Dr. Lehrfeld called Dr. Van Sickle's attention to the medical museums under state licensure, which are tax free because "educational."

Synopsis of Proceedings of the Council of Medical Education at the Chicago Session: Dr. Frank C. Hammond.

Dr. Hammond said that the Council on Medical Education has a constructive program. In the meetings the following problems were discussed: the Cost of a Medical Education; Limitation of Enrollment; Specialization; Group Clinics; Demand for Hospitals; Demand for Interns; Demand for Doctors in Rural Communities; the Expense of Maintaining a College, Laboratories, Libraries, Museum, and the Expense of Maintaining Dispensaries, Hospitals and Teachers.

The cost of a medical education is four times greater than the income from students' fees. In five years the average expenditure has increased 55%, while the average tuition has increased only 24%. Forty-seven medical schools are limiting their classes to 20-170 per class. The establishment of entrance requirements did not decrease the number of applicants. There are now 15,967 students enrolled, the largest number since 1914. Specialists are increasing, general practitioners decreasing in numbers. The curriculum should be revised to train the general practitioner.

Internship should be restricted to those hospitals that will give fifth-year instruction. Several schools have already made hospital internship essential to graduation. There should be a curbing of the specialist in medical teaching.

In discussion of a plan to control unlicensed practitioners it was brought out that the time has come to meet them as educated men with altruistic motives.

It was resolved to request the American Medical Association to appoint a commission of capable scientists for the investigation of the results of treatment in any class of cases.

In the Council on Health and Public Instruction it was urged that more teaching of preventive and curative measures be given in the primary and secondary schools and universities.

In the Conference on Hospital Service it was brought out that the medical staff should have complete control of the medical end of the hospital, the citizens to control its public policy. A course for the training of hospital superintendents was discussed, but not crystallized. The need for the general practitioner was stressed.

May 10th

The president, Dr. J. Norman Henry, in the chair.

SYMPOSIUM ON DIPHTHERIA

Review of the Schick Test in its Relation to Diphtheria and the Active Immunization Against Diphtheria with Toxin-antitoxin.

The first paper on this subject was read by Dr. William H. Park, Director of the Bureau of Laboratories of New York City (by invitation). He said that, as now given, the Schick test consists of the intracutaneous injection of 1/50 lethal dose of diphtheria toxin, 0.1 c.c., or 0.2 c.c. of a 1/40 lethal dose. The reliability of the test depends upon the technician and if properly done is quite dependable. In an institution where there were 150 children between the ages of two and four and a half years, all those showing positive Schick reactions were given three injections of toxin-antitoxin. In one week six came down with patches on the tonsils creeping around to the pillars. Their temperatures ran 103-104° F. Antitoxin was given in four hours and all made uneventful recoveries. But believing that the cases were not diphtheria, the antitoxin was not given to one child, and in this case the recovery was as rapid as with the others.

Toxin-antitoxin is not new. In 1895 it was realized that guinea pigs so injected were immune to the disease. In New York formerly 200 times the fatal dose of toxin mixed with antitoxin was used. Now, however, they are using only five times the fatal dose, neutralized. This causes less annoyance in the older children and in adults. In testing to find the proportion of children who would develop antitoxin from one, two or three injections it was found that 60% of those formerly susceptible became immune after the first, and 83% after the second injection. Therefore, in 1921, only two injections were given, but in cases which did not become immune there was such difficulty in getting the third injection made that now three are given. In 300,000 injections given there were no serious consequences. Severe reactions do occur, and in cases where the test control shows a marked pseudoreaction there should be given smaller doses or none at all. The use of the Schick test saves from one- to two-thirds (who are immune) from receiving the injections. Immunity cannot be promised or a certificate given after the injections without a Schick test.

Four-fifths of the deaths from diphtheria occur between 6 months and three years of age; therefore the injections should be given at the end of the first year or soon thereafter.

In an experiment made in New York City, 57,000 children showed a negative Schick or were negative after a re-test. Of these, 4 had diphtheria. Thirty-three thousand had positive reactions and received injections, some one, some two, some three; of these none had diphtheria. In 90,000 children used as controls, there were 52 cases of diphtheria.

This work has had its effect beyond immunization. Eight-tenths of the families have been awakened to what diphtheria is. Then too, a break is made between one family and another and the disease is not brought home to the younger children. Every school child in New York City received a circular to take home which stated that the child should be tested or immunized by the family physician, or if there were none, by the school doctor. It is becoming more popular to have the younger children done. This is a work of the utmost importance, one that is really valuable.

The second paper on the subject was read by Dr. Edward L. Bauer, Assistant City Diagnostician of

Philadelphia. He said that a report made in 1919 upon the active immunization and testing employed in Philadelphia showed good results, and since then the aim has been to verify the favorable statements, to gain experience in methods of administration, and to learn the best methods of application.

A raised, red, dusky area the size of a half dollar means no protection to diphtheria, no active immunity. The per cent of non-immunes from 6 months to 3 years justifies immunization without a test. The Schick test is important in identifying one not immune after receiving toxin-antitoxin. Accuracy in giving the Schick test is essential. One- to two-tenths c.c. of a 1/40 to 1/50 minimum lethal dose must be given intracutaneously, so that the eye of the needle can be seen through the superficial layer of skin and there is formation of a wheal. A 24-guage, three-quarter inch needle and a tuberculin Luer syringe are used, and the injection made in the left anticubital space on the forearm. A control of heated toxin is used on the other arm. Three injections of the toxin-antitoxin are made at weekly intervals in the deltoid muscle, three months being required for immunization.

The coöperation of physicians is asked to make these measures universal. The work is to be carried on in health centers; child-caring institutions are urged to receive this protection; private welfare workers will be used; and it is planned to follow up birth certificates in six months. Procrastination is detrimental to the child. Why not totally eradicate diphtheria?

Discussion was opened by Dr. Alexander C. Abbott, who urged those present to read the more elaborate account of Dr. Park's work as published in the *Bulletin* of the New York Department of Health, recently. In comparison to the teaching of a few years ago that immunization to diphtheria could be produced by immunizing doses of antitoxin, he brought up the principle of the newer method: that the slight excess of toxin left unneutralized in the toxin-antitoxin mixture now employed brings about an immunity lasting at least 6 years, by the production of an active immunity.

Dr. Randle C. Rosenberger pointed out this as another stride forward in the domain of preventive medicine. The simplicity and harmlessness of the Schick test makes its application wide. The injection of infants under one year of age will prove another factor in the lessening of infant mortality. He commended Dr. Bauer for his work.

Dr. H. Booker Mills said that an institution for mothers and children, formerly located in very poor hygienic, crowded surroundings, and at that time diphtheria free, had in 1920 moved to a much better, suburban location. In June, 1921, a case of diphtheria developed, and from that time on they have seldom been free from the disease. In March, 1922, forty-two children were immunized with three injections. Of twenty-five adults Schicked, 16 gave negative, 6 positive and 3 doubtful reactions. The positives were immunized. One developed diphtheria after the second injection. One adult, exposed to diphtheria for periods over one year and whose throat gave a negative culture, gave a positive Schick reaction. Why so many cases in such excellent surroundings, and where the focus of infection?

Dr. Eleanor C. Jones gave a report of 100 Schick tests made at the Woman's Hospital, Philadelphia. The material used was that put out by the Bureau of Laboratories of the New York Bureau of Health, 0.2 c.c. of a 1/40th lethal dose. Heated toxin was used as control. The results were as follows:

Under 5 years	13 cases,	30.3% positive
5–14 "	9 "	22.0% "
12–20 "	9 "	22.0% "
20–25 "	57 "	21.2% "
Over 25 "	10 "	10% "

Eight pseudoreactions occurred in the older age groups. Toxin-antitoxin was given in 4 cases, and after three months one of these shows a negative reaction. There were no bad symptoms from the Schick test. It is a great protection to the hospital to give the test and the toxin-antitoxin injections. She feels sure that physicians now are quite ready to introduce Dr. Park's methods in private practice.

Dr. Gittings, who has been working along this line at the St. Vincent's Home, said he has found that active immunity is not entirely dependent on the excess of toxin in the toxin-antitoxin mixture, but is due to a breakdown of the mixture in the body, with a liberation of toxin. Active immunity may be established with overneutralized mixtures, but when these are used the re-test must be made after a longer period, as the immunity is slower.

Dr. Park said that all agree that the reaction to toxin-antitoxin is not due to the toxin alone, and it has been shown that mixtures on the borderline give the greatest per cent of children a greater amount of antitoxin. For the solution of Dr. Mills' problem he suggested the possibility of a carrier.

Dr. Bauer closed the discussion by expressing the appreciation which the Department of Health in Philadelphia feels for the work of Dr. Park, urging that the physicians take it up.

May 24th

JOINT MEETING WITH THE PHILADELPHIA UROLOGICAL SOCIETY

Dr. W. H. MacKinney, in the chair.

The Importance of Early Diagnosis and Treatment of Syphilis: This paper was read by Dr. J. V. Klauder, and consisted in a lantern demonstration of the clinical appearance of the chancre. Slides were shown of the lesion in all stages, from the earliest hyperemic area, through the stages of abrasion, suppuration, ulceration, and crusting, to the final scar. Beside the genital chancre, extragenital lesions were shown on the lip, gum, tongue, tonsils, fingers, arm, chin and scalp.

Dark field illumination is valuable in proportion to the duration of the lesion—the shorter the time the more valuable this examination. Examinations made in the first ten days are positive in 93.9%, while of those made after 40 days only 30% show the organism. The Wassermann reaction is the contrary, only 36% proving positive in the first 10 days, while after 40 days 100% are positive. Puncture of the lymph nodes is positive in 80%. The treponema may be grown on special media from a section of a chancre in 3 to 4 days.

In suspected cases treatment should not be begun locally until the dark field illumination has been used.

The Evil of Procrastination in the Management of Hematuria: Dr. W. H. MacKinney.

In this paper Dr. MacKinney said that the term hematuria applies to all cases of blood in the urine. For this there are frequent and numerous causes, and the source must be found. Clinical history, urinary findings and physical examination must all be carefully considered. The term "essential" hematuria is disappearing as the causes are becoming known.

A great group of causes may be found in the kidney: acute and chronic nephritis, trauma, stone, embolus, infarct, thrombosis, tuberculosis, syphilis, tumors, hydronephrosis, pyonephritis, pregnancy, sclerosis, papillitis and chronic passive congestion. Other causes may be stones, tuberculosis or injuries of the ureters; injuries, inflammation, infection or tumors of the bladder; disease of the prostate; stones, foreign bodies or inflammation of the urethra; scurvy, pupura, jaundice, leukemia, intoxications and certain drugs.

Frequently there is sudden hemorrhage with no prodromal symptoms. It occurs, then disappears, and the physician passes it by without treatment. Months later the bleeding may recur and prove to be from an advanced malignancy. Hematuria is only a symptom. All cases should be put to bed, and in cases of bleeding from the upper tract a cystoscopic examination should be made during the hemorrhage. A ureteral catheter may check the bleeding, or the instillation of a solution of adrenalin, or a suprapubic cystotomy may be done. The insertion of a soft rubber catheter, with a tight bandage around the penis may be of benefit. If the hemorrhage is extensive a surgeon should be consulted.

If there could be a closer alliance of internist, roentgenologist and urologist the word "procrastination" could be eradicated from the title.

The Application of Functional Tests of the Kidney in Disturbances of the Genitourinary Tract. Dr. O. H. Perry Pepper read this paper and in it he said that, since the most successful renal tests have been selected, there is little of interest to be said concerning the diagnosis of renal function either in the field of the urologist or of the internist. But there is a middle ground on which more information is needed.

The internist uses different tests from those employed by the urologist. He stresses more the concentration ability of the kidney, the elimination of the kidney as shown by the total phthalein test, and the retention as shown by the urea nitrogen, uric acid, etc., in the blood. The urologist, on the other hand, pays little attention to the concentration ability, but holds as more imporant the time of appearance of a dye, its total excretion, and he relies for estimation of the toxic substances in the blood, wholly upon the blood urea nitrogen. He thinks of the individual kidney or of the tract as a whole, while the internist considers the function of the two kidneys combined.

What is needed is a recognition of the respective parts played by kidney disease and disease of the lower passages in the decrease of renal efficiency, when both are affected. Lesions of the urinary passages influence the results of tests, as when hematuria obscures albumin of renal origin, makes casts hard to find, and renders the reading of the phthalein test difficult. Pyelitis, calculi, prostate obstruction, all make it hard to tell the true state of the kidney. There is a danger that the internist will lay all symptoms to nephritis, while the urologist, in attributing too much to the lower urinary tract lesions, hopes too much and inclines to become too radical in his treatment. The clear-cut cases are easy, but in the case of the borderline condition more data are needed, and this must be collected both by the internist and the urologist.

In *discussion*, Dr. Randall made a plea for a closer coöperation between internist and urologist, since 10% of the cases of both fall in the middle ground group. In every case of lowered function an internist should be called upon to make a cardiorenal study.

The Incidence and Prognosis of Chronic Prostatitis: Drs. B. A. Thomas and J. C. Birdsall.

This paper was presented after a study of 268 cases of acute gonorrheal urethritis and 878 cases of chronic gonorrheal urethritis. Of the first group, 138 were referred to their own physicians, and no diagnosis of prostatitis was made. Forty per cent of those remaining developed no prostatitis with treatment, 59% developed prostatitis, three with abscess of the gland. Fifty-four per cent improved after an average treatment of 8 months. Twenty-four per cent were cured after an average treatment of 9 months.

Of the chronic cases, 68.6% were seen too few times to give a definite prognosis; 1% had no involvement of the prostate; 31.4% had prostatic involvement, and of these 38.4% were cured after a treatment of 10.9 months (average). The treatment consisted of massage every fourth day, with irrigations of potassium permanganate or of silver nitrate. Urinary antiseptics were used and general instructions given as to diet, alcohol and sexual excitement. Nineteen per cent were given autogenous or stock vaccines.

Sixty-one and six-tenths per cent of the cases of chronic prostatitis are still being treated, with improvement. Sixteen cases with arthritis are improving; 4 cases with abscess were operated and show improvement. Two cases of prostatism were seen.

June 14th

SYMPOSIUM ON THERAPEUTICS

The President, Dr. J. Norman Henry, in the chair.

Some Deficiencies of Modern Therapeutics: Dr. James M. Anders read this paper. In it he said that an examination of the true situation with regard to therapeutics is necessary. Preventive and experimental medicine have taken precedence over the cure of disease. Therapeutic advance rests on clinical observation at the bedside, and the true value of laboratory findings rests also on bedside observation.

The first of the defects of modern therapeutics which Dr. Anders mentioned was a failure on the part of physicians to acquaint the public with laboratory investigations bearing on the prevention and treatment of disease. Were this done, there would be an increased interest in scientific medicine. There should be less pessimism in regard to symptomatic treatment, whereby relief and welfare can be procured. Many symptoms are due to abnormal physiology and the condition will yield to proper hygienic measures, drugs and sera.

In recent times there has been a failure to recognize certain therapeutic aids. Training in therapeutics has not been as progressive as in the sciences and there has been too little attention paid to the various means of cure, thereby leading to such cults as Osteopathy and other mongrels, including Chiropractic. The old measures of encouragement for the patient, applied psychology, have been neglected. Instruction of the public in hygiene and their education in the various cults should receive attention.

There has been too much reckless extraction of teeth and tonsils in the search for focal infection.

The middle class are not in a position to obtain the services to which they are entitled and in the rural districts there is the handicap of a retrogression due to the physician's being out of touch with laboratories, etc., and also to his extensive district. This can be partly overcome by an attendance upon and active interest in the county medical society, by medical extension education, and by more courses for graduate instruction. Endocrine disorders and their treatment must be taught as well as the use of sera and vaccines.

Pharmaco-Endocrinology as a Foundation for Rapid Progress in Therapeutics:

In this paper Dr. C. E. DeM. Sajous deplored the fact that of late there has been a nihilism of therapeutics, and cult practitioners have sprung up in numbers equaling the medical profession. Therapeutics must be developed and endocrinology is properly fitted to do this.

The present chaos of information regarding the endocrines is largely due to the defective method of study whereby all branches of medicine have been isolated. No single branch can solve the problem; all must be amalgamated. Correctly speaking, endocrinology is a product of the simultaneous study of over thirty branches of medicine for all the data which will elucidate the subject. Coördination, analysis and synthesis of data is better than a few experiments.

The identity of vitamins, as well as their nature, is still unknown; but study of adrenal extract, tyrosin of plants and the antiscorbutic water-soluble-C vitamin has shown them to be identical. We must gain a knowledge of the manner in which drugs influence the function and action of ductless glands, the manner in which remedies make nature fight disease by glandular hormones.

Dr. Sajous next took up the pharmaco-endocrinology of the thyroid body. The thyroid produces antibodies, its secretion sensitizes for phagocytosis and contains bactericidal properties. Iodin is used by the gland for the elaboration of its secretion, therefore disorders of bacterial origin are aided by the administration of iodin. The thyroid hormone influences katabolism, converting bacteria into their end products. There is a close relation between thyroid function and the development of antibodies. The nature of the relation between thyroid hormone and organic phosphorus is still in question, but it is known that the administration of thyroid extract increases phosphoric acid and vice versa. Therefore the use of potassium iodin in mental and nervous disorders without organic lesion sensitizes the phosphorus (as in lecithin). Arsenic in small therapeutic doses causes a slight general vasodilatation, thereby causing an influx of auto-antitoxin-laden blood in the superficial vessels. This accounts for such effects (as flushes, poly-arthritis, kidney and brain affections), as take place after the administration of new arsenical preparations. Adrenalin, therefore, is the best prophylactic. Arsenic controls the action of the thyroid.

The action of the adrenals may be controlled by strychnin. Digitalis, among its many actions, has an effect on these glands. The nitrites in the early stage of anæthesia, when there is overaction of the adrenal with vasoconstriction and back-pressure on the heart, arrest this condition.

The pancreas yields a trypsin-like enzyme which destroys toxins and bacteria by metabolic action. Its effect may be doubled by drugs.

The pituitary is the origin of a nerve path which runs to the thyroid and kidneys via the basal tissues, bulb, cord, sympathetics and splanchnics. It is the coördinating center of the sympathetic system, from which impulses to the defense mechanism of the endocrines are sent out. Destruction of basal tissues in this nerve path prevents the production of fever and the action of antipyretics. Trypsin activity is raised by heat, therefore to defend the body against pathogenic organisms or processes, the endocrines, stimulated by impulses from the pituitary, raise the body temperature. For example, the thyroid enzyme, rich in iodin, increases the oxidation of the phosphorus in the cells, and trypsin then digests cell products and toxins. In a temperature over 105° trypsin digests normal cells and delicate tissues, hence the danger from hyperpyrexia.

Mercury in small doses stimulates the endocrines, the hot water bag increases trypsin activity (as do helio- and light therapy), and vaccines call forth defensive hormones.

Endocrinology should have been given its just rights by the correlation of all the branches of medicine.

In *discussion* Dr. S. Solis Cohen said that the multiplication of cults is due to the medical profession, in that they have committed the folly of inviting the legislature to regulate medical education, and have neglected the study of physiological therapeutics.

After acknowledging the zeal which Dr. Sajous has shown, Dr. Solis Cohen went on to say that no function develops in any living being which was not latent and potential in the original living matter. The digestion, destruction and casting out of microscopic enemies is but the further development of the primal function (metabolism) shown when the simplest cell utilizes the material from the exterior and rejects waste. The adjustment of internal to external relations and of internal relations to one another to maintain life and preserve the equilibrium termed health is brought about by the autonomic and endocrine system, which two are, in many respects, but part of one system, perhaps, as Dr. Sajous intimates, converging in the pituitary.

The defensive function of the thyroid is well shown in tuberculosis. Whether the great value of iodin in early tuberculosis is due to stimulation or supplementation of this function is still an open question.

Dr. F. X. Dercum said that the problems in endocrinology are not as complicated as they seem. Each gland has a specific, highly specialized epithelium and interstitial tissue, which has a direct relation to the lymph tissue of the embryo. The clinical picture may be general, due to excess of connective tissue and anomalies, as in idiocy, constitutional inferiority, etc., or only one gland may be involved. All disturbances, however, are more or less pluriglandular; therefore, in the treatment of milder forms of disorder, pluriglandular extract is often good. The glands may be grouped in two divisions, each division containing synergists, but the two groups definitely antagonistic. The thyroid, thymus, pituitary, adrenal cortex and parathyroids work together, while opposed to them are the sex glands, adrenal medulla and the chromaffin system. Antagonists must not be combined in treatment.

As regards the thymus, although Harper and McClure recently have denied its endocrine properties, Dercum is in entire disagreement. The thymus gland early is the index to the development of the organism as a whole.

Dr. James H. McKee, in discussing the subject from the standpoint of a pediatrician, said that in his work the thyroid is of the greatest importance, as it plays its part in Cretanism, obesity, and infantilism. In Mongolian idiocy the osseous growth is aided by the administration of thyroid. Phosphorus as lecithin is of value in treating the mentally deficient. He has asked the question "why such effects with pituitrin if it is not an endocrin, and how explain its presence in the spinal fluid?" In closing he paid tribute to the great work of Dr. Sajous.

In closing, Dr. Sajous said that he believes there are not more than four or five ductless glands in the body. Three hundred gr. of anterior lobe of the pituitary administered to a child for growth had no effect. The posterior pituitary is related to the physiological reactions of the adrenals. There is no reason to call it a ductless gland because of its reaction. Extracts made from other organs, e. g., the placenta, will produce the same effect.

Mary A. Hipple, Reporter.

SEVENTEENTH CENSORIAL DISTRICT—JUNE

The tenth meeting of the Seventeenth Censorial District of the Medical Society of the State of Pennsylvania, composed of Bradford, Sullivan, Susquehanna and Wyoming Counties, was held in Sayre June 13, 1922. Seventy-one physicians were present, nineteen of whom were from New York State. Pennsylvania counties were represented as follows: Bradford, 30; Susquehanna, 8; Wyoming, 3; Tioga, 4; Lycoming, 5; and Dauphin, 2. Thirty ladies accompanying the physicians were also present at the dinner and during the afternoon public meeting. Many of the physicians were early in attendance in the operating rooms of the Robert Packer Hospital. The chairman, Dr. Herbert L. McKown, Tunkhannock, called the meeting to order in the Trustee room of the hospital at 10:30 a. m, and he was unanimously reëlected chairman, and Dr. N. S. Weinberger, Sayre, was elected secretary. These officers were authorized to select the time and place for the next meeting.

Dr. Frederick L. Van Sickle, Executive Secretary of the Medical Society of the State of Pennsylvania, gave an interesting review of the more important activities of the state society and urged a hearty support of the county and state societies, of the Medical Legislative Conference of Pennsylvania and of The Pennsylvania Medical Journal. He also spoke of the attractions for the Scranton Session in October and asked for a good attendance from the counties represented in the audience.

Dr. Henry Rawle Geyelin, of New York City, gave a valuable address on "The Starvation Treatment in Epilepsy," including an interesting report of a series of cases that he had treated at the Presbyterian Hospital in New York during the past few years. His results have been such as to justify a more favorable outlook in many cases of epilepsy than has been possible in the past. The address was followed by a general discussion on epilepsy, during which Dr. Geyelin kindly answered numerous questions regarding the disease and its treatment.

Dr. William B. Coley, professor of clinical surgery, Cornell University School of Medicine, New York City, addressed the meeting on "The Value of Radium in the Treatment of Surgical Lesions," the address being illustrated by lantern slides. The results obtained by Dr. Coley in the treatment of many private and hospital cases unsuitable for surgery and as an adjunct to surgery have been most gratifying. A general discussion of malignant diseases and of radium as a therapeutic agent followed.

At a little after one o'clock one hundred physicians and ladies, as guests of the hospital staff, sat down to a chicken dinner prepared by the ladies of the Episcopal Church, of Sayre.

By 2:20 p. m., more than three hundred individuals had assembled in the auditorium of the Coleman Memorial Parish House for the afternoon public meeting, presided over by Dr. Donald Guthrie. The first speaker was J. Montgomery Baldy, M.D., Commissioner of Public Welfare for Pennsylvania, who outlined the functions of the recently created Department of Public Welfare. This department has had a vast number of duties put upon it, and has at present four definite lines of activity. These four lines are health and hospitals, care of children, restoration, and assistance.

Dr. Baldy laid particular stress on the new method of appropriating money for hospitals, which it is hoped will take the whole matter out of the hands of politics. It is his desire that the legislature appropriate a certain amount which is to be paid out by the Welfare Commission as needed to hospitals. These payments are to be made on a business-like basis to hospitals caring for patients who are properly wards of the state. Only hospitals that come up to a certain prescribed standard will be used for the care of these patients, and only patients that have been properly approved by the credit department of the hospital as worthy of state aid are to be paid for. The amount paid for each patient will be the actual cost as determined by the new system of bookkeeping which the Welfare Department has inaugurated. With a proper credit department in operation Dr. Baldy feels that a much larger amount of money can be obtained from patients than has been the case in the past, and that if this is done there is no reason why the state cannot pay the actual cost of taking care of the worthy cases, that, after careful investigation, have been found to be unable to pay for their hospital care. It is his contention that the state should care for those physically incapacitated just as much as it should take care of the insane.

County hospitals, or asylums for the insane, are too small to be effective and duplication of work is the cause of great waste. Mild cases are housed together with violent patients and other types, which is a very unfair procedure when it is known that 30 per cent of all insane persons are curable. Dr. Baldy recommends the establishment of several psychopathic hospitals where all insane patients can be carefully examined and treated before they are finally sent to a hospital for the insane. The present county homes do not have the skilled or even proper care that can be given in the larger state institutions.

The conditions throughout the state with reference to county jails Dr. Baldy thinks are extremely bad, owing to the fact that the prisoners are kept in idleness, are not given proper exercise, and are not treated in the proper manner. In the majority of the county jails there is no outdoor exercise given either men or women, the rooms are extremely small and inadequate and the lighting and ventilation are extremely bad. The present state penitentiaries he described as closed-up places of repression that make men restless and rebellious. These prisoners should be put to work, thereby earning the cost of keeping them and saving money for the people of the state. This, he believes, would benefit the prisoners as well, as they are as a rule contented and happy if they are kept occupied. He believes that it is a big mistake to put boys in jails and penitentiaries with other persons, as has been done in many counties of the state, for it has been shown that these boys in some cases have come out of the penitentiaries hardened criminals by contact with the men there.

Dr. Baldy's plan for the care of dependent children seeks eventually to place all the children possible in homes in the state where they can get real home life and home training. This he thinks can be eventually carried out by the employment of efficient welfare workers whose task it shall be to find proper homes for these charges.

George Edgar Vincent, Ph.D., LL.D., President of the Rockefeller Foundation, New York City, followed Dr. Baldy, and delivered what was characterized as the most witty and brilliant address ever heard in Sayre. The Rockefeller Foundation is pushing its medical work into every land, and the lecturer was to have talked about "Medical Education in Many Lands," but limited his discussion largely to China. The Peking Union Medical College was founded in 1906 by various missionary societies in America and England, and in 1915 it was taken over by the China Medical Board of the Rockefeller Foundation. The college has a four years' course in medicine and an additional year in the laboratories or hospital. There is also the Premedical School with a three years' course, preparatory to admission to the Medical School.

Dr. Vincent said that it is the purpose of the Foundation to turn the entire establishment over to the Chinese and have it conducted under their auspices as soon as it is possible to do so and be assured of efficient management. The Peking Union Medical College is a high grade medical school from which Chinese graduates, both men and women, can go out and spread medical science throughout the country and give its benefits to all the people. But it is a problem that will take many decades. Where in this country we plan on doing a thing in a year, in China we must allow fifty. Still there is much that is encouraging.

In China the first duty is to the family. When a man attains a position of power and affluence his first duty is to take care of all his relatives and furnish them remunerative jobs. If there is anything left after they are taken care of, all well and good, but they are his first care. This is not regarded with disfavor, as in the United States, but is commended by all the people, and a Chinese who failed to follow such procedure would be severely condemned.

The central government of China governs very little and the average Chinaman pays little attention to it. It is his family, guild and village that govern him. His disputes are settled there, and when a republic was proclaimed most of the inhabitants did not know it, and if they ever heard of it they did not know what it meant. In a country of four hundred million people only about 600 voted in the senatorial and about 2000 in the congressional elections. There is very little loyalty to China among the inhabitants. It is all devoted to relatives to the farthest degree removed, to the guild and village. They however, are gradually acquiring a sense of nationality, and with this sense some are beginning to resent the influence of the foreigner. They are becoming great users of American cigarettes and patent medicines. They also take to many fake cures brought in from abroad.

In a very humorous manner the speaker told about the war now under way, saying that the armies seldom clashed. One advanced as another retreated, but actual conflict is rare. The battles that have taken place are due more to a failure of ordinary tactics than any intention of killing each other. Only one wounded soldier had been received at the Foundation Hospital.

Dr. Vincent paid a high tribute to the missionaries in China. They are a fine lot of able men and women and are doing a wonderful work, having among other things established 350 hospitals in China.

In closing, the lecturer expressed his pleasure at meeting with so many physicians and his great respect for the medical profession which knows no nationality. All medical schools keep in close contact and what one achieves soon becomes known to all the others for the benefit of mankind.

The above is only a brief and imperfect account of the largest and the best of the ten really good meetings held in this Censorial District. The only regrettable feature is the fact that more of the physicians in the four counties belonging to the district were not present, and that more of the public did not avail themselves of the pleasure and profit of the afternoon addresses.

C. L. Stevens, Reporter for Bradford County.

SEVENTH CENSORIAL DISTRICT—JUNE

The fifth annual meeting of the Seventh Censorial District, comprising the medical societies of Perry, Juniata, Mifflin, and Huntingdon Counties, was held at Huntingdon, Thursday, June 22, 1922. The meeting was held in the Blair Memorial Hospital, and there was a large representation from all the component societies, all the visiting doctors appreciating the courtesies of the members of the Huntingdon County Society, also the very elegant luncheon served by the nurses' organization of the hospital.

The following very interesting program was prepared by the district censors, Drs. Carl, Haines, Rupp, and Sears. From 9:30 A. M. to 11:45 A. M., there were presented minor surgical operations, such as general practitioners meet in daily office work. Especially interesting were the lantern pictures of x-ray findings of diagnostic import. Ward demonstrations were also given of unusual medical cases. Of especial interest was the case of a boy, aged 10, with a large hematoma of right kidney, with possible sarcomatous degeneration, also a case of lymphatic leukemia. A number of other unusual cases from a diagnostic viewpoint were shown, and very skillfully demonstrated by the staff of the Blair Hospital.

At 12:00 M. the general meeting was held in the reception room at the nurses' home, Dr. W. H. Sears presiding, and Dr. F. A. Rupp, secretary. Dr. F. R. Hutchinson, president of the Huntingdon County Society, welcomed the visiting doctors, indicating the value of such censorial meetings to the general practitioner. In his response, Dr. F. A. Rupp compared the medical profession with the other professions, much to the advantage of the medicos, also decrying the effort to establish two classes of medical schools, one with high entrance qualifications to supply the cities with the high-brow physician and specialists, the other with lower qualifications, that the country may be supplied with men of lower ability, also emphasizing the fact that the average medical work in the country is better done than the average work in the city.

Dr. Van Sickle, Executive Secretary of the State Society, in a short talk, spoke on the legislative program for the 1923 session of the Legislature, advocating very strongly a one-board control of all practitioners of the healing art.

Dr. Frontz, district councilor, strongly advocated monthly meetings of all societies of the district, stressing the importance of the work of the country doctor. He also emphasized the medical defense work of the state society, and advised all members of the state society to keep all dues paid up that they may come within the limits of the defense fund.

This meeting was much favored by the presence of two distinguished guests, Dr. Lawrence Litchfield, president-elect of the State Society, who discussed most ably and in detail "Diagnostic Problems of the General Practitioner," and Dr. J. P. Crozier Griffith whose paper on the "Causes, Diagnosis, and Treatment of Certain Symptons Associated with the Gastro-Intestinal Tract in Infancy and Childhood," was a masterpiece. As these two papers will be presented before other medical gatherings, or put into permanent forms for the general profession, they are not abstracted here. The only comment here needed is the fact that those who heard these two papers were repaid many-fold for their journey to Huntingdon for this particular censorial meeting. Drs. Litchfield and Griffith were given a unanimous vote of thanks for their papers.

These get-together meetings of the profession were never more important than to-day. Each one of us needs the inspiration of closer association and greater coöperation with our confreres, as well as the broadening influence of the speakers who come to us from a distance. F. A. Rupp, Reporter.

STATE NEWS ITEMS

DEATHS

Mrs. Margaret McGraw Arnold, wife of Dr. Charles A. Arnold, of the Allegheny County Medical Society, died June 23d, at her home in Pittsburgh.

Dr. Frederick D. Sowden, of Philadelphia, died June 6th. He was born in 1861, and was graduated from Jefferson Medical College, Philadelphia, in 1883.

Dr. J. Emmett O'Brien, of Scranton, said to have been the youngest military telegrapher to serve during the Civil War, died on June 14th, aged 73 years. Dr. O'Brien was a graduate of Rush Medical College, Chicago, in 1869.

Dr. Emanuel Walton Snyder, of Marysville, died May 21st, at the age of 64. Dr. Snyder was a graduate of Jefferson Medical College, Philadelphia, class of 1889, and was for several years president of the school board in his home town.

Dr. Leo Thomas Mullahey, of Shenandoah, died at the St. Agnes Hospital, Philadelphia, of meningitis, May 27th, aged 31. Dr. Mullahey was graduated from Jefferson Medical College in 1914 and served in the Medical Corps of the U. S. Army during the World War.

Dr. Joseph Trimble Rothrock, of West Chester, a graduate of the University of Pennsylvania School of Medicine in 1868, professor of botany at his alma mater 1877-1893, editor of many works on botany, and a veteran of the Civil War, died June 2d, aged 83, of heart disease.

Dr. Edward M. Fly, who was located at Plumsteadville about 25 years ago, died in a sanitarium at National City, California, April 14, aged 56. An operation had been performed a short time before his death, from which he failed to rally. Dr. Fly was a graduate of the Jefferson Medical College, class of 1894.

Dr. Rollo H. Hoey, of Easton, died at a private sanitarium in Morristown, N. J., on May 22d. His death resulted from shell shock sustained while serving as a surgeon with the British forces in France during the World War. Dr. Hoey was graduated from the University of Pennsylvania School of Medicine in 1909.

Dr. Russell H. Boggs, of Pittsburgh, died at his home on June 2d. He was born in Evans City and graduated from the Medical School of the University of Pittsburgh in 1897. He attained great eminence for many years past as one of the leading roentgenologists of the country, in which specialty he was a pioneer. In conjunction with the roentgen rays, of late years he had also specialized in radium therapy. Dr. Boggs leaves his mother and widow, Mrs. Etta Houck Boggs.

Dr. Joseph Grant Wheeler died of pneumonia, on June 7th, at the home of his parents, at Bellevue, aged 26 years. He was a graduate of the University of Pittsburgh Medical School, class of 1920, and was a member of the Allegheny County Medical Society, the State Medical Society and the Americal Medical Association. He is survived by his parents, his brother, Roy D. Wheeler, and two sisters, Mrs. Edna Ackerman and Miss Ruth Wheeler.

Dr. Paul B. Doyle, aged 48, died at his home in Pittsburgh, on June 6th. He was born in Leechburg and was graduated from the University of Pittsburgh School of Medicine in 1897, later serving as physician and surgeon for several industrial corporations. Dr. Doyle was a member of the Allegheny County Medical Society, the American Medical Association and the American Association of Industrial Physicians and Surgeons. He leaves his widow, Mrs. Leah Horn Doyle.

Dr. David F. Unger, of Mercersburg, Franklin County, died Friday, June 2d. He was born at Smithsburg, Washington County, Md., in 1843, was a graduate of Jefferson College, Washington, Pa., and of Bellevue Medical College in 1867. He served in the Civil War, being a member of the 21st Cavalry. He practiced in Mercersburg for fifty years, and was a member of the Medical Society of Franklin County since 1878. Always regular in attendance, he was active and interested in the work of the Society.

After three months' illness, Dr. Edmund Jennings Lee, a great-grandson of Richard Henry Lee, of Virginia, signer of the Declaration of Independence, died May 25th, at his home in Philadelphia, aged 68 years. Dr. Lee was born in Alexandria, Va., and was graduated from the University of Virginia in 1874. After attending Washington and Lee University, he entered the University of Pennsylvania, from which he was graduated in 1876. In 1877 he was graduated from the University of New York with the degree of Doctor of Medicine. Dr. Lee was the author of "Lee of Virginia" and also wrote many historical articles.

Dr. Annetta Kratz died at her home in Danboro, on May 28th, aged 75 years. After teaching school for four years she took up the study of medicine and graduated at the Woman's Medical College, Philadelphia, in 1871. She acted as intern for 18 months in the New England Hospital for Women, at Boston. Returning to this state, she began active practice in Lansdale and remained there for some years, until defective hearing compelled her to retire about ten years ago to her home at Danboro. She is survived by four brothers and one sister. One brother is also a physician, Dr. Edward A. Kratz, of Champaign, Illinois.

Dr. J. L. Forwood, of Chester, died at his home June 4th, at the age of 91 years. Dr. Forwood, who was a brother of the late Major General William Forwood, at one time Surgeon-General of the Army, was born near West Chester. As a youth he taught school at Eagleville, later entering the University of Pennsylvania School of Medicine, from which institution he was graduated in 1857. He enlisted during the Civil War and was detailed in charge of the Army Hospital at Essington. After the war he entered politics and served as mayor of Chester four times. For many years he had been chief of the surgical staff at the Chester Hospital. His widow, who is very ill, survives him.

Dr. J. Chris Lange, aged 77 years, died at his home in Pittsburgh, June 7th. He was born in Germany, coming to this country at an early age. He was a graduate of Bellevue Medical College, New York, and thereafter has continuously practiced medicine in Pittsburgh, where he has always held a high rank as an internist, having been for years identified with high medical positions of trust and honor, such as staff member of the West Penn Hospital, consulting physician to Mercy Hospital, one of the founders, Dean and Professor of the Principles and Practice of Medicine at the University of Western Pennsylvania, and president of the Allegheny County Medical Society.

As perhaps the most active of the founders of the first medical school in Pittsburgh, western Pennsylvania owes an unpayable debt of gratitude to Dr. Lange. As a clinician and teacher Dr. Lange was unexcelled. It was a delight to listen to his clear enunciations and explanations. His audience was always attentively at his command. In his death, Pittsburgh loses one of her greatest and most vigorous intellects in the domain of medicine, a great inspiration to the host of students and physicians, who have enjoyed the benefits of his instruction and personality.

He leaves his widow; three sons, Dr. W. J. and George Lange, of Pittsburgh, and Walter Lange, of Nebraska, and two sisters.

ITEMS

Dr. Wm. Penn Vail, of Philadelphia, has removed to Blairstown, N. J.

Born to Dr. and Mrs. G. W. Muffley, of Turbotsville, May 18th, a daughter.

Dr. J. R. Brobst, of Bloomsburg, has returned from Cleveland, Ohio, where he took up a special medical course.

Dr. Felix A. Murphy, of Doylestown, has recovered from an attack of pneumonia and has resumed his practice.

Dr. and Mrs. Thomas S. Blair, of Harrisburg, have returned from a trip to Montour Falls, Geneva, Rochester, and Newark, N. Y.

Dr. H. J. Donaldson, of Williamsport, was a guest at a dinner given to Governor Sproul, by Hon. William S. Ellis, at Bryn Mawr, May 20th.

Dr. James B. Heller, of Pottsville, and Miss Martha Silliman Cole, daughter of Mrs. Bessie Silliman Clarke, also of that city, were recently married.

Dr. and Mrs. Oliver H. Perry Pepper, of Philadelphia, and their family, sailed the latter part of June for Europe, where they will spend the remainder of the summer.

Dr. F. R. Clark, of Berwick, president of the Columbia County Medical Society, has been a patient at the Geisinger Hospital, Danville, where he recently underwent an operation.

Miss Rebecca Brenholtz, daughter of Dr. and Mrs. W. S. Brenholtz, of Williamsport, is one of the candidates in the contest for a National Good Will delegate from that city to visit France.

Dr. J. Allen Jackson, of the State Hospital, Danville, and Dr. R. A. Keilty, of the Geisinger Hospital, Danville, were recently in attendance at the session of the American Psychiatric Association at Quebec, Canada.

Dr. George T. Fox, of Bristol, recently purchased what was formerly the Harriman Hospital, but abandoned when the large shipyards were closed by the government. He is planning to open it as a private institution.

The Williamsport Hospital Staff Association elected the following officers at their last meeting: President, Dr. H. J. Donaldson; Vice-President, Dr. P. C. Reilly; Secretary and Treasurer, Dr. Galen Castlebury, all of Williamsport.

Dr. James S. Mosher, of Williamsport, attended the reunion of the Officers' Association, of Camp Merritt Base Hospital, of which he is a member, at New York, during May. A dinner was given at the Yale Club on Vanderbilt Avenue.

At the Quebec meeting of the American Psychiatric Association, held June 6th to 9th, the Association elected Harry W. Mitchell, M.D., of Warren, president. Dr. Mitchell is trustee and councilor of the Seventh District of the Medical Society of the State of Pennsylvania.

The engagement of Miss A. Loretta Watson, of Philadelphia, and Dr. William L. Weber, of Overbrook, was recently announced. Dr. Weber served with the First Pennsylvania Regiment on the Mexican border and with the United States Naval Reserve in the World War.

Dr. H. L. Foss, of Danville, attended the annual reunion of ex-members and members of the Staff of the Mayo Clinic, Rochester, Minn., May 26th. He was accompanied by Dr. Reid Nebinger, also of Danville, and Drs. R. J. Adams, of Watsontown, and George Davis, of Milton.

Miss Elizabeth Blanchard Randall, of Catonsville, Md., recently became the bride of Dr. Harry Richmond Slack, of Baltimore, Md. Dr. Alexander Randall, of Philadelphia, was one of the ushers. After the wedding reception at the home of the bride, Dr. Slack and his bride sailed for China, where they will remain for a year.

The Philadelphia College of Pharmacy and Science in its catalogue number, issued March, 1922, announces that the College will limit the size of its classes in order to assure thorough instruction and adequate facilities for students who may be enrolled. Admission will not be a matter of priority of application but will be based upon the fitness of the candidate. The first-year classes of the Ph.G. Course will be limited to 300 students. No limit has as yet been placed on the B.Sc. classes, nor on the postgraduate classes, but the right is reserved to terminate the matriculation period when the number enrolled fills the laboratories provided for such courses.

Dr. William C. Braisted, formerly Surgeon-General of the Navy, is president of the College.

BOOKS RECEIVED

Obstetrical Nursing. A Textbook on the Nursing Care of the Expectant Mother, the Woman in Labor, The Young Mother and Her Baby. By Carolyn Conant Van Blarcom, R.N., Formerly Assistant Superintendent and Instructor in Obstetrical Nursing and the Care of Infants and Children at the Johns Hopkins Hospital Training School for Nurses. With 200 Illustrations and 8 charts. New York: The Macmillan Company, 1922. Price $3.00.

The Eighteenth Amendment and the Part Played by Organized Medicine, by Charles Taber Stout. Publisher: Mitchell Kennerley, 489 Park Ave., New York. Price $1.50.

United Fruit Company, General Offices: Boston, Massachusetts. Medical Department Tenth Annual

Report, 1921. The report is a finely printed book of 110 pages, illustrated. It will be sent to any physician free of charge, on application to The United Fruit Company, Boston, Mass.

BOOK REVIEWS

BASAL METABOLISM, ITS DETERMINATION AND APPLICATION, Frank B. Sanborn, M.S., Editor. Sanborn Company, Publishers, 1048 Commonwealth Avenue, Boston, Mass., U. S. A., 1922.

As will be seen from the fact that there is no author, but an *editor* instead, this is a system, not a monograph. Although comprising only 282 pages, including its index, it is made up of a collection of original papers by nine different authors, and abstracts from the writings of twelve others.

The papers follow one another without continuity, each being, so to speak, a complete entity in itself. That makes it hard to read, but what makes it more so is that a number of the chapters are repetitions of the same thing, simply detailing the methods adopted by different authors for accomplishing the same end.

It is not a book to be read, except by those having some particular technical interest in the subject, and it would seem as though they ought already be familiar with its contents.

It is highly technical, full of tables and calculations, all of the utmost value, but useful only for reference.

Unfortunately it is printed upon highly glazed paper, which was doubtless employed on account of a few very good and useful illustrations; but it is a pity that the reader has to suffer from the excessive reflections for the not much more than a dozen illustrations that might just as well have been inserted on separate pages.

After having read much of the matter with care, the average physician will undoubtedly come to the conclusion that the directions are not such as to enable him to calculate basal metabolism, and that he must employ an expert, or pursue a course in chemistry in anticipation of undertaking it for himself. J. McF.

THE MEDICAL CLINICS OF NORTH AMERICA. Boston Number, March, 1922. Volume 5, No. 5. Philadelphia and London: W. B. Saunders Company.

This is an excellent number of the Clinics, in quantity and quality. Its contents will appeal to the medical clinician rather than to the surgeon. An enumeration of contributors and articles follows: Dr. Henry A. Christian—Effects of Digitalis in Cases of Chronic Cardiac Disease With Regular Rhythm; Dr. Joseph H. Pratt—Acute Rheumatic Myocarditis; Dr. William H. Robey—Angina Pectoris With and Without Cardiac Signs; Dr. Louis E. Viko and Dr. Paul D. White—Important Disorders of the Heart-beat; Dr. James P. O'Hare—Hypertension; Dr. William D. Reid—Cardiovascular Syphilis; Dr. Channing Frothingham—Syphilis; Dr. Lewis Webb Hill—Lobar Pneumonia Without Physical Signs, Nontuberculous Infection of the Tracheo-bronchial Lymph Nodes; Dr. Stanley Cobb—Epilepsy; Dr. Cyrus C. Sturgis—Myxedema; Dr. Bronson Crothers—The Effect of Breech-presentation Upon the Central Nervous System of the Fetus; Dr. John Lovett Morse—Chronic Indigestion of Early Childhood; Dr. Edwin T. Wyman—Diarrhea; Dr. Charles W. McClure—Peptic Ulcer; Dr. Thomas E. Buckman—Purpura in Infants and Children; Dr. Elliott P. Joslin—Diabetes; Dr. Howard F. Root—Rare Paralyses in Diabetes Mellitus; Dr. W. Richard Ohler—Glucose Tolerance Tests; Dr. Chester Morse Jones—Bile Pigments in a Case of Paroxysmal Hemoglobinuria; Dr. George R. Minot—Acute Blood Loss Due to Pathologic Hemorrhage. A. A. E.

PROTEIN THERAPY AND NON-SPECIFIC RESISTANCE. By William F. Petersen, M.D., Associate in Pathology, University of Illinois, College of Medicine, Chicago, Illinois, with an introduction by Joseph L. Miller, M.D., Professor of Medicine, Rush Medical College, University of Chicago, Chicago, Illinois. Cloth 8vo. 314 pages, price $4.50. New York: Macmillan Company, 1922.

This book is well worthy of perusal by general practitioners as well as by physicians doing special work. The subject matter is discussed in a well balanced manner, the disadvantages occurring in some cases from this line of treatment being emphasized as strongly as the advantages by the indications in its favor. The author manifests enthusiasm which is tempered by saneness of thought. The book is recommended as a safe guide for anyone who is interested in this subject. A good bibliography is attached which will make it convenient for amplified study.

A. C. M.

EPHRAIM McDOWELL, "FATHER OF OVARIOTOMY" AND FOUNDER OF ABDOMINAL SURGERY. With an Appendix on Jane Todd Crawford. By August Schachner M.D., F. A. C. S., Philadelphia, J. B. Lippincott Co., 1921.

It sometime happens at the close of a successful play that amidst a thunder of applause the author appears before the admiring public, holding the heroine by one hand and the hero by the other, to bow behind the footlights as the curtain repeatedly goes up and down.

It is with some such vision that one completes the reading of this book. From the dimness of a not very remote, though badly illuminated past, Dr. Schachner emerges upon the stage of authorship, leading Ephraim McDowell with his right, and Jane Todd Crawford with his left, while he as impressario bows in triumph and satisfaction to his audience, proud of these dear ghosts of the past, and overjoyed to find himself in their select society.

Dear ghosts they are, and as difficult to conjure up as any that ever a medium sought for, yet through the personality of Dr. Schachner, showing themselves intelligent, reflective, courageous, determined, but above all modest and retiring.

Ephraim McDowell was born about November 11th, 1771, in that part of Virginia called Rockbridge County, of Scotch-Irish parentage, and at the age of 12 years, moved to Danville, Kentucky, where he spent the remainder of his life, except for a brief period during which he studied medicine at Edinburgh. During these two years he associated much with, and studied under John Bell, devoting himself to chemistry, anatomy, and surgery. At the end of that time, not waiting to take a degree, he returned to his frontier home, and began the practice of medicine in 1795. Fourteen years later, in 1809, he was called to see Mrs. Jane Todd Crawford, who lived in Motley's Glen, on the waters of Caney Fork, sixty miles away. She was found to be suffering from an ovarian tumor that had attained to a considerable size, and no prognosis was possible except a prolonged period of invalidism from which there was no escape except through death.

She was a little woman, aged 46 years, mother of five children, accustomed to the privations and dangers of frontier existence, and brave.

The consultation between the two must have been serious, and the tall grave doctor with his piercing black eyes must have very clearly informed her of the dismal future, while she with composure and fortitude inquired what might be done. McDowell's teachers had frequently pointed out that it ought to be possible to relieve such cases by operation, though the danger was such as to make every man of them hesitate. McDowell and Mrs. Crawford, however, were of different metal. There was a chance, a hope, through operation; without it only slow death. The patient did not hesitate: "If you are willing to make the experiment, I am ready."

She rode 60 miles on horseback to Danville, and probably put up at McDowell's home, where the operation was performed, without an anesthetic, but with abundant hope, and plenty of Presbyterian faith in God. The tumor, weighing twenty-two and one half pounds was removed, and the patient recovered, returning to her home in twenty-five days. For her the incident was closed, and she seems to have made few allusions to it during the remainder of her long life which ended at about 78 years of age, nor does mention of it appear upon her tombstone now standing in Johnson Cemetery near Graysville, Indiana. For the doctor it was also closed, except that to him the way was opened to relieve other similar cases, which as opportunity offered, he proceeded to do. But it appears that to him it was "all in the day's work," and only a part of his regular duty; and only after seven years, and two other cases, is he pursuaded by his friends to publish a record of his work. This he did, and like many another genius and pioneer, instead of being welcomed to a seat with the mighty, saw his statements doubted and his work discredited. But his soul was supreme above such trifles, and it may be doubted whether he ever craved the praise his later friends accord him. He probably never recognized the importance of his effort, and curiously enough died of what seems to have been appendicitis,—a disease the surgical treatment of which is one of the direct outcomes of his own work—in the 59th year of his age.

Someone has said, and it is often repeated by those who have found it true, that the reading of Boswell's "Life of Johnson" results in little acquaintance with Johnson, but a very broad one with Boswell. So it seems to us with this biography of McDowell. One finishes it with a very shadowy idea of McDowell or of Mrs. Crawford, but with a very clear idea of Dr. Schachner. We may realize that the former was a most worthy and meritorious pioneer who paved the way for all the abdominal operations of the future, and that on that account he deserves all the praise, and all the honor that we can render his memory at this late date, just as the author wants us to, but the real character that pervades the book, that appears in every chapter, and that makes the greatest impression, is Dr. Schachner. This is in no manner his fault; it was never his intention; he will doubtless be surprised and perhaps offended when his attention is called to it; but just the same, no one can read this book without having a far clearer vision of this Louisville surgeon devotedly advocating the claims of his hero. No one can learn of the pains he took to collect his facts; follow his arguments repudiating the claims of others to the discoveries of his hero; descend the family tree of the McDowells, or of the Crawfords; or wade through the lengthy correspondence which has to do with the attempt to purchase the old McDowell house as a memorial to its former great owner, without learning to know Dr. Schachner. And great credit is due him for his efforts and for the untiring energy with which he traced up every clue, obtained every document, photographed the interesting places, corresponded at wearying length with dozens of strangers, in the pursuit of the knowledge with which to write this interesting and valuable book. How he loved his hero! With what pride he identifies him with Kentucky, his native state! What immense value he places upon his "experiment"! We know that McDowell was the first of the ovariotomists; we all appreciate that his work was fundamental and preliminary to the abdominal surgery of the present day, and we, therefore, all want to give him all the credit to which he is entitled. But this just measure does not satisfy Dr. Schachner. To him McDowell is a superman; his own admiration of him is unbounded, and he craves the sympathetic interest and devotion of his readers.

Apart from its great theme the book is full of interesting facts about other prominent men of the time, and is an interesting homily upon the advantage the lonely and independent individual has over his associated fellows of the towns and universities. The former can do as he pleases, the latter must bow to popular sentiment. As Dr. Schachner points out, of the two, it is usually the independent man that does things.

J. Mc.F.

THE TREATMENT OF ACUTE INFECTIOUS DISEASES. By Frank Sherman Meara, M.D., Ph.D., Professor of Clinical Medicine and formerly Professor of Therapeutics in the Cornell University Medical College in New York City, Consulting Physician to Bellevue Hospital, New York, etc.

This volume is a second edition of a book on the Treatment of Acute Infectious Diseases. The subject is covered by the author in an attractive form, giving his individual experience and opinion based on a large clinical experience, instead of confusing the reader with numerous references. The treatment of each acute disease is given in detail and will be a great assistance to any physician wishing to inform himself on the latest handling of these diseases. The summary at the end of each chapter is a new feature of medical books and adds to its value, giving the consultant very quickly the information desired. The chapter on Encephalitis Lethargica and Influenza brings the work up to date, in the treatment of the newer epidemic diseases. Some physicians, from their experience, may differ with the author in his choice of antipyretic in the treatment of influenza, but the author gives logical reasons for his preference, and is not arbitrary in condemning other drugs of this class. The chapter on septicemia and pyemia is especially worthy of commendation. The book can be recommended as a reliable reference work for students or practioners of medicine.

J. B. McA.

LESSONS ON TUBERCULOSIS AND CONSUMPTION. By Charles E. Atkinson M.D. Funk and Wagnalls Company Publishers.

For any layman who wishes to read 460 pages on this subject the book is very earnestly recommended. It is really a "stimulating and cheering volume" written in plain, non-technical language and carries, as any such work should, a message of hope, of optimism.

We feel, however, that 460 pages of even excellent material are a good many to expect laymen to read and digest. The purpose of the book, which the author states is "To show how to prevent tuberculosis, how to recognize its first symptoms and how to win back health," could, it seems to us, be well outlined in fewer words and thus with more power.

Those who read it will be well repaid. It is written by one who knows his subject and who, apparently, is full of it.

C. R. Phillips.

CLINICAL DIAGNOSIS. By Charles Phillips Emerson, A.B., M.D. 5th edition. J. B. Lippincott Company, 1921, $7.50.

It is indeed a pleasure to welcome this latest edition of Emerson's "Clinical Diagnosis." Clinicians and clinical microscopists alike have found the data and teachings of the former editions authoritative and valuable. A strong feature is the fact that the author, by reason of his extensive training, is able to speak with authority on both the technique and the clinical application of the laboratory examinations he takes up. In fact this book has long been recognized as an invaluable aid to the medical student, the advanced clinical miscroscopist and the internist.

This fifth edition has been entirely rewritten. The latest and most approved methods of blood and urine chemistry have been incorporated. There is room for criticism in that these newer methods are, in several instances, described rather too briefly and in a perfunctory manner. Also the reader is not guided as to the method of choice under various circumstances. In fact, in his manner of dealing with these newer laboratory chemical procedures, it is evident that Dr. Emerson is not writing with the same authority, based on long personal experience, that underlies his handling of the older laboratory methods.

Proof reading has been a little careless, and although most typographical errors are evident, yet in a few instances the reader might be mislead; as, for instance, the statement that "creatinine very seldom exceeds 20 mg. per 100 cc. of blood" (page 552). The student that is unfamiliar with the actual findings would not suspect that this is undoubtedly meant for 2 mg. per 100 cc.

However, these are very minor points that are criticised. The work as a whole is a mine of valuable information, useful to all physicians and students. The additions and changes in this latest edition bring the work up to date.

R. R. S.

SURGICAL CLINICS OF NORTH AMERICA.

New York Number, December, 1921. Philadelphia and London: W. B. Saunders Company.

1. Dr. Howard Lilienthal: Surgery of Thorax.—Much of Dr. Lilienthal's experience and skill were acquired from his service in France. Surgery of the thorax is real major surgery, but as depicted by him the field of approach is good, the pathology easily recognized, the danger zones and the dangerous sequellae definitely known. He reports the extirpation of a dermoid cyst of the mediastinum, lobectomy for suppurative bronchiectasis, lung mobilization in chronic empyema, rib resection with collapse of chest for tuberculosis. He emphasizes the following points: (a) Incision from angle of ribs behind angle of scapula forward to costal cartilages; posteriorly from 2nd to 9th ribs if necessary. (b) Use of his special rib-spreader for adequate orientation. (c) Cut at right angle to plane of ribs, thus crushing intercostal vessels to prevent bleeding. (d) Removal of whatever ribs may be necessary. (e) Use of intrapharyngeal differential pressure when and if needed. (f) In dense adhesions scarification of visceral pleura (not decortication) to permit lung expansion.

2. Dr. A. O. Wilensky.—A comprehensive interpretation of the neurologic manifestations of fracture of the skull—old surgical truths oriented from an intelligent personal view-point.

3. Dr. J. J. Moorhead: Traumatic Surgery.—*Traumatic Inguinal Hernia:* Treated from the medicolegal phase, the author shows that no single act of violence will cause a hernia unless there is a severing of the overlying muscular and fascial protectives. A large number of adults have hernia and know nothing about it. In these cases it is an anatomic and not a traumatic effect. A single act of violence must produce adequate intra-abdominal pressure, and the onset of symptoms—tumor, pain, etc.—must be immediate. Dr. Moorhead follows the Bassini method. Cure depends on (a) a high tie-off and narrowing of the neck; (b) coaptation of internal oblique muscle to shelving edge; (c) lengthening distance between the two rings; (d) primary union. In working males the author's recurrences are between 5 and 10%.

Traumatic Spondylitis (Kümmel's Diseases) Diagnosis: (a) Injury to back without gross evidence of spinal column damage. (b) Intraspinal symptoms—motor, sensory, trophic or visceral. (c) Localized pain over affected vertebrae, with gait defects and limited spinal motion. (d) Lump in painful area. (e) Normal U-shape of body of vertebrae converted into V-shape. Treatment: Spinal immobilization by plaster cast or brace, or operation.

Knee Joint Injuries: The structure of the joint is described in some detail. The pathology consists of: (a) Synovitis, for which the treatment is immediate aspiration and immediate immobilization, with bilateral patellar incision or vertical splitting of the patella in the purulent type. (b) Crucial Ligament Injury, for which the treatment is aspiration or (in severe cases) anchoring of ligaments to femoral condyle. (c) Semilunar Cartilage Injury, for which the treatment, in mild cases, is non-operative; in severe cases operation by the "no hand contact" method is necessary. (d) Loose Bodies, for which the treatment is removal by operation. This contribution on knee joint injuries will repay repeated perusals.

4. Dr. Wm. A. Downes: Jejunostomy.—When stomach ulcers, because of size or malignancy, prove inoperable for excision on gastro-enterostomy, jejunostomy after the Witzel method, with the tube left in for six or twelve months, is recommended.

5. Dr. Seward Endman: Ileus Complicating Appendicitis.—Persistent vomiting or regurgitation, rapid, thready pulse, distended tympanitic abdomen, clammy sweat, etc., are sometimes relieved by performing a high enterostomy on the opposite side from the umbilicus—also after the Witzel method. The jejunum, where the regurgitant vomitus lies, should be drained and not the lower bowel. Neither this method nor any other will save all cases, but it is worth a trial in those dangerously sick patients.

6. Dr. Harold Neuhof: Endothelioma of Conus and Cauda Equina.—The symptoms are constant pain and loss of power in legs, bilateral drop-foot, Babinski, and ankle clonus, with a slight reduction of pain and tactile sense over the buttocks. The x-ray is helpful in spinal bone abnormality, but not in spinal cord lesion. Usually recovery is practically complete after laminectomy and tumor removal.

Giant Endothelioma of Medulla.—The operation performed was suboccipital craniotomy and removal of arches of atlas and axis under local anesthesia. The tumor was lodged immediately under the cerebellum, compressing the medulla to the left. The outstanding features were; atrophy and paresis of all limbs; reflexes absent; sensation below face absent; limited motion of head; lateral nystagmus; paralysis and fibrillary twitching of right half of tongue; respiration diaphragmatic; severe occipital pain; bladder and rectal disturbances—the classic indication for cord tumor in the cervical region. The tumor was successfully removed in part, but the remainder was inoperable, and there was sudden and fatal cessation of breathing 36 hours after operation.

Mayo Clinic Number, October, 1921.

1. Donald C. Balfour: Gastrojejunocolic Fistulas Following Gastro-enterostomy.—Ten per cent of gastrojejunal ulcers cause gastrocolic fistulas. Non-absorbable suture at site of former gastro-enterostomy was an etiologic factor in only 9 out of 55 cases, infection from the adjacent ulcer playing the principal part, or infection from teeth, tonsils, gall-bladder or appendix. The chief symptoms are: sudden attack of pain, diarrhea and fecal vomiting. The treatment is to sever stomach from colon, invert fistulous openings, undo the old and make a new gastro-enterostomy opening; or to leave the gastro-enterostomy, after having obliterated the fistula. This article is well illustrated.

Use of Actual Cautery for Benign Lesions of Stomach and Duodenum.—The mortality from 437 cases was 1.87%—less than half the average mortality of all other types of operations. The subsequent death rate was also lowered, due to the specific destructive action of heat on the cancer cell, as shown by Percy. The chief points are: low operative mortality, absence of postoperative morbidity, satisfactory symptomatic results, low incidence of late sequellae.

2. C. H. Mayo: Formation of a Cloaco in Treatment of Exstrophy of Bladder.—The embryonic development of this distressing anomaly is given at length. It occurs once in 50,000 cases, and there were 72 cases at the clinic since 1896. The cloaca, or receptacle, is formed by suturing the ureters into the sigmoid, between the mucous membrane and the muscular coat, for 2.5 cm. before perforating into the lumen of the bowel in a manner similar to the Witzel method of gastrostomy. There should be an interval of three or

four weeks between each ureteral implantation. A good sphincter ani is necessary. The exstrophied bladder is then entirely removed. The article is well illustrated, and a number of cases reported.

3. V. C. Hunt: Huge Diverticulum of Bladder.—Capacity of diverticulum was 1000 c.c. The operation performed was excision of the diverticulum, tying off amputation and dropping the right ureter into the pelvis. A subsequent nephrotomy of the right kidney was performed, and the recovery was permanent without right nephrectomy. The correct diagnosis was established only at the time of a preliminary cystotomy for retention.

4. Judd, Bumpus and Scholl: Prognosis in Carcinoma of Prostate.—Neither the type of operation—perineal or suprapubic, partial or complete—nor the extent of growth influence prognosis, but rather the type of growth removed. In type 1, glandular formation and cell structure are fairly well preserved. In type 2, glandular formation is destroyed, there is excess fibrous tissue, and the malignant cells appear in lines or streaks. The former is less malignant than the latter. The article is completed by statistics.

5. W. J. Mayo: Splenic Syndromes.—The author describes splenectomy for five different syndromes: splenic anemia, pernicious anemia, hemolytic icterus, polycythemia and splenomyologenous leukemia. Blood findings are given and operation is advised only when the patient is on the upgrade, after one or more transfusions. The function of the spleen is not known, but operation is sometimes helpful.

6. Verne C. Hunt: Acute Conditions of Abdomen.—There are three stages in this condition: contamination, reaction and spreading peritonitis. In the latter stage the Ochsner-Murphy method should be employed, the McBurney incision is useful only to drain abscesses, or for appendicitis in children, or for enterostomies. A personal interpretation of recognized surgical axioms in the acute abdomen is presented.

7. H. I. Lillie: Chronic Frontal Sinusitis.—The following points are noted: (1) Two-stage operation. (2) Good exposure, elimination of pockets and leveling of bone edges. (3) Avoid vertical incisions. (4) Beck incision for both sinuses. (5) External drainage not necessary. (6) Early removal of external dressing.

8. W. I. Lillie: Ocular Phenomena in Chiasmal Lesions.—The author brings out the following points: (1) Failing vision is an early sign. (2) There are definite opthalmic lesions in all cases and neurologic changes in one-third of the cases. (3) In two-thirds of the cases ocular changes occur, like those in the pituitary syndrome. (4) There is no evidence of acromegaly. There are changes in the color fields, and in the form fields scotomatous areas occur.

D. A. Webb.

ABDOMINAL PAIN. By Prof. Dr. Norbert Ortner. Authorized translation by William A. Brams, M.D., and Dr. Alfred P. Luger. Rebman Company, New York.

There is probably no condition which is so puzzling and difficult of diagnosis and which demands such immediate solution as abdominal pain. It may be the very first signal of a severe and even dangerous condition—one in which the matter of a few hours delay in proper treatment may mean loss of life. On the other hand, pain of equal intensity may be the result of some relatively innocent condition which a simple remedy will soon entirely relieve. The responsibility of the physician is of the very greatest and all the professional skill and common sense he can muster is none too much when he faces the symptom of abdominal pain.

Professor Ortner, in writing about this symptom, has brought to bear all his knowledge and professional skill, based on an enormous clinical experience under conditions under the various types and location of the diagnoses either in the operating room or by postmortem examination. For this reason, his book is a mine of valuable and authoritative information.

Nevertheless, anyone who attempts to take a single symptom and build about it a system of diagnosis is undertaking an almost insurmountable problem. This is especially true of pain in the abdomen. There are so many conditions that might give rise to this symptom that almost at once the investigator is in a confusing network of "possibilities." To a certain extent Prof. Ortner overcomes this difficulty by grouping conditions under the various types and location of the pain. As one takes up the book for study, this grouping seems promising, but as one reads he soon realizes that the author has failed to overcome the inherent difficulties of such a treatise. Under any type of pain, he mentions almost every organ and condition of the abdomen as a "possibility" or "to be considered." In each instance the author is correct, but the work would be of more value to the physician if Professor Ortner would select from the imposing array of "possibilities" the most likely "probabilities" and give his main thought to these. As a well rounded, complete treatise on abdominal pain, capable of being studied and assimilated as a whole, the book is a failure. An attempt to read chapter after chapter and retain a logical grasp of the data presented soon ends in confusion. However, as a reference book, to be studied with a particular case in mind, this book would be of some usefulness in that it would call to the mind of the physician the many possibilities that could be considered.

R. R. S.

PHYSICAL DIAGNOSIS by W. D. Rose, M.D. Second edition, C. V. Mosby Company, St. Louis, Mo., 1921.

The importance of a thorough and intelligent examination of the body, as an aid to diagnosis, can never be underestimated. In the curriculum of the medical schools this subject of Physical Diagnosis is allotted a deservedly important place, and the thoroughness with which students are drilled constitutes real groundwork for future skill in the practice of medicine. Physicians, busy with the routine of practice, are apt to become careless or hasty in their examination of the body of the patient, and by allowing themselves thus to slight one of their most useful aids, they are digging themselves a deep pit into which they are sure to fall, sooner or later. In fact, the care and thoroughness with which routine physical examinations are made will spell the difference between ultimate success and failure. In these days, when the laboratory is so popular, there is danger of forgetting the fundamental science of observation, palpation, percussion and auscultation.

To both the student and practicing physician Dr. Rose's work on Physical Diagnosis will prove exceedingly valuable. He correlates in an exceedingly happy way the methods of examination, the mechanical bases for the finding, together with the clinical deductions one may draw. Unusual effort is made to bring out clearly the "why and wherefore" of the findings in health and disease. This is especially to be commended, since, after all, intelligent examination, with a clear understanding of the basic principles involved, leads to steadily increasing proficiency and skill, and adds an interest to the examination such that instead of it being slighted as a bothersome task, it is eagerly pursued. Every subject is profusely illustrated with photographs, x-rays, and diagrams. In fact, nothing is spared in making clear and definite the ideas of the author.

The student in the medical school will find Dr. Rose's book a most valuable aid to the understanding of this most important subject. The practicing physician could well afford to devote considerable time and effort to a study of its pages.

R. R. S.

A TREATISE ON FRACTURES IN GENERAL, INDUSTRIAL AND MILITARY PRACTICE. By John B. Roberts, M.D., and James A. Kelly, M.D., second edition, J. B. Lippincott Company, Philadelphia.

This second edition of Roberts' and Kelly's Fractures presents to the profession one of the most concise and complete treatises on the subject of the day. It displays painstaking attention to detail and withal a conservative viewpoint. At all times the reader is conscious of the intention of the authors to make the treatment of each fracture an individual performance rather than simply one of a class. Repeatedly is the attention called to the absolute necessity of accurate knowledge of the anatomical and functional points and a clear idea of the physics involved in correcting the deformity, relying for a good functional result rather on the operator's ability to apply the latter idea with intelligence than on specific splints and appliances.

The principles laid down in the preface are particularly sound and indeed cover well the general view of the book. The first section covers the general consideration of fractures as to cause and variety, diagnosis, repair and general treatment, while the rest of the book is taken up with the consideration of the fractures of the different bones. Frequent references to the report of the American Fracture Committee are used to reinforce the authors' opinion. Full consideration is given to the different appliances and methods brought forward by the experience of the World War, but the final dictum is the operator's ability to view each case as a law unto itself and to apply his knowledge of anatomy and function to secure proper reduction, to maintain proper healthful rest for the part during the period of repair, always under constant intelligent observation and finally by proper treatment to obtain the best and earliest restoration of function.

The book commends itself to the reviewers as being a most valuable contribution to the surgical profession from its thorough consideration of details and the conservative and sane viewpoint of the authors on the subject.

T. B. A.

THE PRINCIPLES OF MEDICAL TREATMENT, by George Cheever Shattuck, M.D., fifth revised edition. W. M. Leonard, Inc., Boston, 1921.

The latest edition of this valuable work will be welcomed by the many who have derived so much help from the preceding volumes. It was first published in 1911 as a "Syllabus of Treatment" giving "sound principles of treatment based on known pathology." Through successive enlarged editions this original purpose has been kept in mind. The present edition presents not only revisions, additions and new sections by the author, but the following additional articles: Tuberculosis, by Dr. John B. Hawes, II; Acute Infections Most Common in Childhood, by Dr. Edwin H. Place; Influenza, by Dr. Gerald Blake; Diabetes, by Dr. Benjamin H. Ragle; Serum Treatment for Pneumonia by Dr. Henry M. Thomas, Jr.

On the whole Dr. Shattuck and his collaborators realize in full their effort to "offer clearly and concisely sound principles of treatment based on known pathology." The idea of presenting everything in very brief and concise manner has been so strictly adhered to that in many instances its value has been impaired. One notes with a sense of deep appreciation the sound common sense underlying the outlines of treatment, in some cases presented in only a few words; and there comes a feeling of regret that the author has not taken more space in order to develop his ideas and methods in greater detail. In many chapters the reader feels that he has here merely the notes of the lecturer; and he misses the many details, purposes and sidelights that the lecture in its entirety would undoubtedly unfold.

One cannot criticise the principles of treatment as laid down. Good common sense and a clear understanding of purpose are evident in every line. This common sense and clear vision is especially to be commended and the physician who develops along these lines, in his application of therapeutics, is building on a firm foundation.

To the physician who constantly runs to a book, seeking a prescription for any and every symptom, this work of Dr. Shattuck will be of no value; but for the physician who practices medicines with a clear understanding of principles involved and purposes to be attained, the Principles of Medical Treatment by Shattuck will be a real joy and help.

R. R. S.

DISEASES OF THE EYE. (New ninth edition) A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. deSchweinitz, M.D., LL.D. Professor of Ophthalmology in the University of Pennsylvania. Ninth Edition, Reset. Octavo of 832 pages with 415 text-illustrations and 7 colored plates. Philadelphia and London; W. B. Saunders Company, 1921. Cloth, $10.00 net.

The ninth edition of this standard work on ophthalmology, which is recognized as the most complete text book in the English language on this special subject, has been thoroughly revised and enlarged by the inclusion of new material and more extended reference to the individual work of others, in the subjects that have proved of value since the publication of the previous edition. Naturally the World War furnished unusual opportunities for the study of closely related functions of the eye and the nervous system, and necessitated a reawakening of interest in the various complexities of surgery of the face and orbit (plastic surgery). While the most important of these advances are clearly presented the literature on the subject was so extensive that it had to be, in the words of the author, "utilized within the marked limitations that a book of this character entails."

The eminence of the author as a teacher insures that the new edition will continue its leadership among the textbooks for undergraduate students as well as those devoting themselves to ophthalmic practice.

G. H. C.

GYNECOLOGY AND OBSTETRICS: The Practical Medicine Series, 1921. The Year Book Publishers, Chicago, Ill.

This volume is one of a series that is aimed to present each year a review of the literature in the various subjects of medicine. It is published primarily for the general practitioner, and yet each subject, being taken up in a separate volume, is treated with sufficient fullness to make the work of interest to the various specialists. In this volume the subject of Gynecology is reviewed by Dr. Emilius C. Dudley, Professor of Gynecology in the Northwestern University Medical School; and the subject of Obstetrics by Dr. Joseph B. DeLee, Professor of Obstetrics in the same school. They have covered the literature most thoroughly, both American and foreign.

The usefulness of this book lies simply in the fact that it gives to the reader a digest of the various articles on these particular subjects that have been published in the past year. The articles are grouped under the proper headings and arranged, to a certain extent, in logical sequence. However, no effort is made to correlate the ideas presented in the articles digested, with the fundamental knowledge of the subject; nor do Professors Dudley and DeLee in any way pass judgment on the validity or importance of the ideas as presented in the articles. Consequently the book is of limited value. It would be useful to one who is thoroughly familiar with the groundwork of the subject and who is able to pass judgment on the various articles reviewed; but to a general practitioner, who is not in this position, the book probably would be of very little value.

R. R. S.

DISEASES OF CHILDREN, by Herman B. Sheffield, M.D., New York City. Cloth, 798 pages, with 238 illustrations, mostly original, and nine color plates. St. Louis; C. V. Mosby Company, 1921.

This volume (the first edition) the author says in his foreword is born as the result of thirty years experience in the practice of pediatrics and is intended for the student and general practitioner. The work is divided into fourteen sections. In his endeavor to cover the entire field of pediatrics in one volume, the author is necessarily brief on many important subjects; yet he uses valuable space to include articles that should be placed in special works (such as the technic of the Wassermann reaction) or which, on account of the rarity of the condition, could have been omitted (such as leprosy in childhood).

Contrary to the author the reviewer believes that in modern pediatrics polypharmacy has no place; that antitoxin should be injected intramuscularly or intravenously and never subcutaneously; that definite instructions should be given regarding the examination of breast milk so that the information obtained may be of some value; that one drop of paregoric for each year of age is too conservative a dose; that the mortality in lobar pneumonia is not 10 to 20% but averages 3 to 5%.

The volume is well illustrated, is printed on good paper, but is not well bound.

H. J. C.

THE PHYSICIAN HIMSELF FROM GRADUATION TO OLD AGE, by D. W. Cathell, M.D., 359 pages, published by D. W. Cathell, M.D., Baltimore, Maryland. Price $3.00.

This pleasing writer has produced a pleasing book —more pleasing than the former editions.

The lessons learned in more than a half century of experience, gained from a large practice in a large city, going in and out from the poorest hovel to the stately mansion, from the pauper to the millionaire, and all these expressed in good English makes it a most valuable volume to the older practitioners and especially valuable to the younger men of our most noble profession. The library with its volumes of medicine, surgery, physiology, chemistry and all the specialities will not be complete without "The Physician Himself." The Author has presented in panoramic review the scenes from the initial cry of the infant step by step, to the laboring sighs of old age. He has turned the flash light on the physician, on his office, on his paraphernalia, on his habits, on his deportment and on his character. After reading this book the older man will dream dreams and the younger man will see visions. The former will not let the mistake of yesterday be the error of to-day, and the latter will be fortified to meet and master the difficulties more easily.

J. B. F. W.

GASTRIC ANALYSIS

Chester C. Fawler, William H. Spencer, Martin E. Rehfuss and Philip B. Hawk, Philadelphia (Journal *A. M. A.*, Dec. 31, 1921), found that when fluid substances of widely varying character (water, hydrochloric acid, sodium bicarbonate, sodium chlorid, tea, coffee, vinegar, etc.) are introduced into the normal human stomach, the secretory response ultimately reaches a uniform optimum level before evacuation occurs. This rather definitely defined area, which varies for different individuals, we would call the gastric equilibrium zone. This mechanism is partially or totally lost in disease.

NEW AND NONOFFICIAL REMEDIES

Izal.—An albuminous emulsion containing not less than 50 per cent. of "izal oil," obtained in the destruction of bituminous coal, and consists essentially of monatomic phenols boiling between 205 and 300 C. Izal is practically free from phenol and cresols. Izal is a germicide and disinfectant. The germicidal efficiency is claimed to be twelve times as great as that of any equal quantity of phenol, but it is stated to be less toxic than phenol. The Abbott Laboratories, Chicago.

Izal Disinfectant Powder.—Izal oil, 10 per cent.; naphthalene, 5 per cent.; inert, absorbent earth, 85 per cent. The Abbott Laboratories, Chicago.

Powdered Protein Milk-Merrell-Soule. — Dry Protein Milk—A modified milk preparation having a relatively high protein content and a relatively low carbohydrate content. Each 100 Gm. contains approximately: protein, 38 Gm.; butter fat, 27 Gm.; free lactic acid, 3 Gm.; lactose, 24 Gm., and ash, 5 Gm. Powdered protein milk is said to be useful for correcting intestinal disorders of infants and children. For the majority of conditions, powdered protein milk should be administered in small quantities according to the age and condition of the patient, after a period of starvation of from twelve to forty-eight hours. Merrell-Soule Sales Corp., Syracuse, N. Y.

Sabromin.—Calbroben.—Calcium Dibrombehenate. —Sabromin contains not less than 28.5 per cent. of bromine. Sabromin is not adapted to conditions in which a rapid saturation of the system with bromine is required. It is indicated in conditions in which the bromides cannot be administered for continued periods without gastric disturbance or in which brominism is caused readily. It is claimed that sabromin is of value in conditions in which a mild sedative action is desired, particularly in conditions requiring prolonged administration. Dosage: from 0.3 to 1.2 Gm. (Winthrop Chemical Co., Inc.), New York (*Jour. A. M. A.*, May 6, 1922, p. 1389).

Sabromin tablets, 8 grains. Winthrop Chemical Company, Inc., (*Jour. A. M. A.*, May 6, 1922, p. 1389).

Iothion.—Iopropane.—Di-Iodo-Hydroxy-Propane.— Iothion contains from 77 to 80 per cent. of iodine. It is used when it is desired to obtain the systemic effect of iodides by external application. Iothion is used in the form of iothion oil, in solution in alcohol or glycerin, or in the form of ointments containing from 5 to 20 per cent. of iothion. Winthrop Chemical Company, Inc., New York (*Jour. A. M. A.*, May 13, 1922, p. 1459).

Iothion Oil, Iothion, 10 parts; chloroform, 10 parts; olive oil 80 parts. Winthrop Chemical Co., Inc., New York (*Jour. A. M. A.*, May 13, 1922, p. 1459).

Typhoid-Paratyphoid Vaccine (Prophylactic) (See *New and Nonofficial Remedies*, 1922, p. 310).— A typhoid vaccine marketed in packages of three 1 Cc. bulbs, the first dose containing 500 million killed typhoid bacteria, 375 million killed paratyphoid A and 375 million killed paratyphoid B bacteria; the second and third doses each containing 1,000 million killed typhoid bacteria, 750 million killed paratyphoid B bacteria respectively. Parke, Davis & Co., Datriot, Mich.

Pneumococcus Vaccine (4 Types) (See *New and Nonofficial Remedies*, 1922, p. 304.—A suspension of pneumococci, Types I, II, III and Group IV, in equal proportions, in physiologic solution of sodium chloride, preserved with cresol, 0.3 per cent. each cubic centimeter contains 3,000 million killed bacteria. Marketed in packages of four 1 Cc. bulbs; four 1 Cc. syringes; 5 Cc. vials and 20 Cc. vials, respectively. Parke, Davis and Co., Detroit, Mich.

Streptococcus Vaccine Polyvalent (Scarlatina).—A streptococcus vaccine (See *New and Nonofficial Remedies,* 1922, p. 308), marketed in packages of four 1 Cc. bulbs, each cubic centimeter containing 1,000 million killed streptococci isolated from scarlatina cases; also marketed in packages of 4 Cc. syringes, in 5 Cc. vials and in 20 Cc. vials. Parke, Davis and Co., Detroit, Mich.

Pertussis Vaccine.—A pertussis bacillus vaccine (See *New and Nonofficial Remedies,* 1922, p. 303), marketed in packages of four 1 Cc. bulbs, each cubic centimeter containing 4,000 million killed pertussis bacilli (Bordet); also marketed in packages of four 1 Cc. syringes, in 5 Cc. vials and 20 Cc. vials. Parke, Davis and Co., Detroit, Mich. (*Jour. A. M. A.,* May 13, 1922, p. 1459.)

Diphtheria Toxin-Antitoxin Mixture-Mulford.—Each Cc. of this mixture (See New and Nonofficial Remedies, 1922, p. 282) constitutes a single dose containing three lethal doses of toxin and 3.5_t of antitoxin. It it marketed in packages of three 1 Cc. vials; in packages of thirty 1 Cc. vials, and in packages of one 10 Cc. vial. H. K. Mulford Co., Philadelphia.

Phenolsulphonephthalein-Ipco. — A brand of phenolsulphonephthalien-N. N. R. (See New and Nonofficial Remedies, 1922, p. 222.) It is marketed in the form of Vensterile solution phenolsulphonephthalein, I Cc. representing phenolsulphonephthalein-Ipco 0.006 Gm. in the form of the monosodium salt. Intra Products Co., Denver. (*Jour. A. M. A.,* May 23, 1922, p. 1612.)

THE ANTIVIVISECTION INITIATIVE IN COLORADO

Again efforts are being made to stop research directed toward the relief of pain and disease and the prolongation of life. By use of the initiative and referendum, the antivivisectionists of Colorado have filed a bill, to be voted on at the November election, which prohibits experimental operations on animals except to relieve or cure the animals themselves. It is the same sort of measure that was presented for popular vote in California in 1920. If it should be adopted it would abolish all experimental study of problems in general biology and in general and veterinary medicine; it would discontinue modern diagnostic methods — no Wassermann tests, no diphtheria tests for virulence, no inoculations to determine the presence of tuberculosis would be permitted. The preparation of vaccines and curative serums, and the standardization of drugs by animal tests could not be carried out. The law would thus render useless to a large degree the laboratories in the state and city boards of health, in the hospitals, in the medical school and in the Bureau of Animal Industry. It would seriously interfere with the livestock interests, for it would not only check experiments for the cure of animal disease but would refuse to threatened herds and flocks the protection obtainable from well-tried serums and vaccines. Such legislation would imperil every man, woman and child in Colorado, and the domestic animals as well.

There is no reasonable call for such legislation. Ancient prejudices, misinformation and gross perversion of the facts have been used to mislead people regarding the nature and the beneficent results of animal experimentation. In every medical school of the United States, in veterinary schools, in state health board laboratories, humane rules governing the treatment of experimental animals have been adopted and are being enforced. The "open door" policy, admitting freely to the laboratories the officers of humane societies, has now been adopted in the medical institutions throughout the land. There are drastic laws in the statutes against cruelty to animals. If, as the antivivisectionists insist, cruelties are being practiced in the laboratories, there is no excuse for their negligence in permitting these cruelties to continue and the perpetrators to go unpunished. Until the existing law is proved inadequate, no new law should be enacted.

The present effort of the antivivisectionists subjects the people of Colorado to an intelligence test on a large scale. When a similar test was made in California two years ago, the measure prohibiting animal experimentation was defeated by a quarter of a million votes. Everywhere, in the national Congress, in Massachusetts, in New York, in Pennsylvania and elsewhere, the antivivisectionists have failed to secure restrictive legislation. They should not have their first success in Colorado.

When people are properly informed regarding the methods of animal experimentation, the precautions taken to avoid unnecessary pain, the character of the investigators, and the great benefits that have come to man, and to animals as well, from medical research, there is no question that a large majority will not only tolerate, but will promote the activities of the laboratory workers. It is of prime importance that well-informed physicians recognize the essential need of freedom of inquiry about the problems of life and death, and that they give their time generously to explain how the proposed law would endanger the welfare of Colorado.

The responsibility does not rest, however, solely on physicians. The fight against preventable disease and premature death should be one of the first interests of all public-spirited citizens. They should recognize that in this fight the antivivisectionists are slackers, doing nothing themselves to secure better health and longer life for their fellows, and trying their best to prevent others from using the ways which have proved most effective. These ways are now used throughout the civilized world. The intelligent voters of Colorado must not undermine and destroy their own defenses.—*Jour. A. M. A.,* June 17, 1922.

DETERIORATION OF NEO-ARSPHENAMIN

Commercial neo-arsphenamin, George B. Roth, Cleveland (*Journal A. M. A.,* April 22, 1922), states is a relatively unstable substance in the ampule. Temperature is a potent factor in causing its deterioration. It is advisable to keep it under storage conditions similar to those required for vaccines, that is, at icebox temperatures, until all the factors concerned in causing the deterioration of the compound are understood.

BRIGHT LAD

"What makes you scratch your head?"

"Because," said the youngster, "I'm the only one that knows it itches."—*Country Gentleman.*

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ORIGINAL ARTICLES

THE ROLE OF THE NONMEDICAL GRADUATE IN THE MEDICAL LABORATORY*

COURTLAND Y. WHITE, M.D.

PHILADELPHIA

When this paper was suggested to me I thought that perhaps the experience I had had in various laboratories where the nonmedical graduate was employed would make it possible for me to formulate a paper that might be of help to others along this line. Since getting down to actual preparation of the paper, I find the subject is a most difficult one to crystalize, complex in many ways, and I am not at all satisfied that this presentation will cover the ground that it was first intended it should. However, I am presenting it for what it is worth, hoping it will stimulate discussion and thereby lead to a better solution of a serious problem.

The present laboratory problem of the employment of other than medically trained assistants is an important one, and its solution is of the gravest concern in the practice of medicine to-day. It, therefore, should be considered most carefully.

During the past fifteen years the laboratory has become far more important in medicine than in previous years, due, as you know, to the great number of newer methods that have been introduced. The laboratory has become virtually swamped with requests of various kinds that have been presented for solution. Since the war, the medically trained laboratory worker has had to seek fields far more remunerative than the laboratory. This has also diverted men and women who have been best fitted for this work to other fields. To offset these conditions it has become necessary for the nonmedical graduate to enter the medical laboratory. Another important factor which bids for the nonmedical graduate is that many of the newer methods require work of a purely technical nature, either in preparation or in performance, which can be done equally well by those who do not have a medical degree. The question, therefore, is not the inability of the nonmedical graduate to fill satisfactorily a position in the medical laboratory, but the abuse of the position, requiring such a person to furnish information which he is unable to give, because of his nonmedical training.

For the purpose of this paper the definition of a nonmedical laboratory worker is one with a high school or equivalent education, or a college or university graduate with a degree of B.S. or B.A. The few other workers who have attained proficiency in the laboratory without the above preliminary education are so few that consideration of them, especially at this particular time, is not deemed necessary. It is unfortunate that in the early employment of laboratory workers, many were given positions where the work was purely of an assisting nature. Some of these have been pushed far beyond their capacity. More careful discrimination is at present made in the choice of such workers.

Further, in this paper we will consider the nonmedical graduate in the medical laboratory only from the standpoint of the laboratory of a general hospital, or a laboratory whose function is varied but on the whole for the use of the general practitioner or surgeon. In other words, I have not considered the worker in laboratories where histological work is done only, or the worker in a purely chemical, anatomical or physiological laboratory. It seems to me that these groups are special groups and require no consideration here.

I. THE NONMEDICAL GRADUATE'S PART IN THE WORK OF THE LABORATORY

(a) *The Technician's Part in the Work of the Laboratory:* It seems quite clear to me under this heading, that the technician's part in the work of the laboratory should be technical, and technical work in the laboratory means the preparation of specimens for examination and diagnosis. The technician's part is one of assistance. To amplify this statement: in the case of surgical material from operations, the technician, after the pathological specimen has been cut from the original specimen by a physician, receives it and passes it through the various stages of fixation, imbedding, cuts the histological specimen and carries it through the various routine and prescribed staining methods, labels the finished specimen and there stops.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

In the case of the Wassermann test, the technician's part is to prepare the glassware for the test, prepare the blood serum from the clot, bleed the sheep, prepare the sheep cells, see that the proper material is at hand, shake the Wassermann tubes, after the various pipettings have been completed, place the tubes in the incubator and remove the Wassermann from the incubator to the ice box. The actual setting up of the test is done by an advanced worker, or a medically trained worker.

For bacteriological work, his part is the preparation of the various media, plating various specimens for bacterial content, and staining smears from cultures. There he stops.

All of this work, of course, should be under the supervision of some more advanced worker, and unless the technician has had much experience, consultations with authority higher up should be considered as much his duty as the actual performance of the work.

It will be clearly understood, therefore, that I believe the technician's work should be purely technical. To acquire sufficient knowledge to become proficient along the lines above suggested demands much training; not only book training but practical training, and this cannot be gotten quickly and in any other way than by actual work as an assistant to someone doing the work.

(b) *The Advanced Worker's Part in the Work of the Laboratory:* Under the head of advanced workers might be grouped those who have given a long apprenticeship as a technician and by their own endeavors have prepared themselves for advanced work. The great group of this class consists of men or women who have had college training and are therefore, because of broader training, better fitted to take up the work from the standpoint of diagnosis. Just where this group can stop depends entirely on how much specializing they have done in any one particular field, for instance, in bacteriology. Such workers can diagnose a given organism quite as accurately, from a bacteriological point of view, as any one with a medical training. In other branches of the laboratory they may become equally proficient. This group, however, should not be considered in any way with the former group of technicians, who are virtually laboratory assistants in the strictest sense.

To specialize in any one laboratory branch, technical training is essential; consequently, the advanced worker in the laboratory has had the probation of the technician.

2. WHO SHALL INTERPRET LABORATORY EXAMINATIONS FROM THE STANDPOINT OF THE CASE?

The writer sees no discussion in this question. The medical man, surgeon, or specialist in charge of the case, or his consultant, is the only one to interpret the results of the laboratory examinations. Where the practicing internist or surgeon cannot make the interpretations of examinations, the medical laboratory worker—a medical bacteriologist, or pathologist—should be the only one called in as the laboratory consultant. It should not be forgotten here that the laboratory is a medical workshop and the results obtained therein should be considered only as links in the chain of evidence in forming a diagnosis. It is sad to relate that far too many internists and surgeons to-day, believe that the laboratory welds the whole chain and they too often await the laboratory's diagnosis and then accept it. Make your diagnosis without the laboratory and ask the laboratory to confirm it.

The writer feels that to-day there is more syphilis charged up to the human race through diagnosis from the Wassermann test alone than should be, especially considering the way in which Wassermann tests on an average are performed.

It is believed that this question has suggested the topic for discussion. If so, the best advice that I know to give you is to weigh your laboratory findings with the clinical evidence presented. If the laboratory findings cannot be fitted into them, consult your medically trained laboratory specialist. Don't consult a technician, be that a nonmedical, trained or a medical trained technician. Scrutinize your laboratory workers and demand that the technician attend to technical work and not give out information that belongs to far more highly trained workers.

3. THE FINANCIAL RETURNS OF THE LABORATORY WORKER

The conditions of the laboratory which have brought forth the discussion embodied in this paper are all probably due to the poor financial returns offered laboratory workers.

(a) *The Financial Returns of the Technician:* Salaries for this group should be graded and the more proficient and capable should receive more compensation than the less trained or inefficient. This, however, is not always the case. There are entirely too many hospital and institutional laboratories which have a stated and fixed sum for their laboratory technician, which consider that they are living up to rules and regulations when such positions are filled, and many of them are filled by incompetent technicians. Having a fixed sum, the same is offered to the incompetent as to the competent.

(b) *The Financial Returns of the Advanced Worker:* From the necessity of their preliminary training and for their advanced work they should be paid a salary commensurate with the duties performed. This, of course, varies in various laboratories. Again we find there is not enough gradation in salaries for these workers in many institutions and there is too much dependence placed, in the choice or employment of them, on civil service examinations, either Federal, state or municipal, which examinations in the most part require book knowledge rather than practical training and experience.

(c) *The Financial Returns of the Medical Graduate Who Is in Laboratory Work:* The medical graduate who is in charge of laboratory work should be one trained in a broad way before taking up laboratory work for his life's work and should have completed at least an internship in some general hospital in general medicine and surgery, besides his postgraduate work in the laboratory.

The salary of such positions is entirely too low to bid men capable to do this work to enter the field or to continue in it after having entered it. The physician and the surgeon who at present demand so much laboratory work have little thought or care for the financial returns of the head of the laboratory. This in itself in late years has driven out medical men who have ability along the line of laboratory work and has prevented other men from entering this field, so that if the conditions continue, it will not be long before there will be no medical graduates in the laboratory side of medicine. Reflect what this means to the future of both medicine and surgery. At this very moment the subject discussed has been suggested by poor laboratory work.

It is also true that these same institutions offer the medical trained laboratory head *the honor of the institution's associations* rather than a salary in proportion to that given the technician, or proportionate to the services rendered; in consequence of which little or no time is given to keep abreast of the laboratory work.

4. RECOMMENDATIONS FOR THE BETTERMENT OF THE SERVICE

The nonmedical graduate in the medical laboratory has come to stay. They are essential and when properly trained are efficient. In no way need their presence supplant the medically trained worker. In no way should the results of such workers be interpreted as diagnoses. Laboratory findings should be interpreted by the internist and the surgeon in the individual case. To better the present laboratory conditions, which are far from being efficient, the following suggestions are recommended:

Medical graduates in the laboratory should be paid adequate salaries. It is their life work and they should be able to look forward to a compensation as good as they might have obtained had they gone into other branches of medicine. This is not too much, as the nature of the laboratory work will not bid for great numbers of medical graduates. If the financial returns are sufficient more medical graduates will enter the field, and then the technician will not be asked to overstep his position.

It has been suggested that the state qualify such workers by examinations, i. e., state board examinations, but the writer does not feel that at this time, that would better the conditions. The solution of the problem is entirely within the medical profession. If they will look to the laboratory examinations, and consider by whom made and by whom interpreted, they can decide for themselves whether the results of such examinations are worthy to be considered in making a diagnosis.

If the individual practitioner cannot do this, then the local county medical society can surely survey the field and express its opinion. I believe it is the function of the State Society to endeavor to uphold the standard of the profession. Failing in this, a poor laboratory may perhaps rightly come under the survey of the new Department of Welfare of the State; for the laboratory which is giving out fictitious or bad work certainly cannot benefit the community and is very likely to lead to serious consequences in that community.

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DISCUSSION

Dr. Samuel R. Haythorn (Pittsburgh): Dr. White's most interesting paper is on a live subject. In these days of complicated and highly technical laboratory tests it would be difficult, indeed, to run a laboratory without one or more well-trained technicians. To quote from a recent article, "the well trained, honest and reliable technician is of inestimable help to us and we cannot get along without her." I have had some experience in training, employing and working with laboratory technicians. There are many who become most proficient in the performance of difficult tests, yet very few of these ever become dependable for uncontrolled interpretation of the tests, the technic of which they do very well. Some of us have occasionally found this to be the case to our sorrow. It is the less competent and the uncontrolled technicians toward whom attention should be directed, those who are working alone in the small hospital laboratories, many of which have been made necessary by the present State Board ruling, and in physicians' offices, where they do both the tests and the interpretation without any real scientific control. Some technicians are capable of making a fairly reliable urinalysis and a good blood count without supervision, but I will state unhesitatingly that no physician has a right to have a test conducted by technicians in his office unless he, himself, has had special training in the technic of the test and understands its interpretation thoroughly. It is stylish for the physician to have his own laboratory but few are able to furnish and conduct it properly and pay the technician's salary without forcing his patients to undergo unnecessary tests in order to defray the laboratory's expense. Another evil which has grown out of the laboratory in the physician's office is that chiropractors are adopting imitation laboratories in connection with their offices, and that advertising laboratories of all kinds are springing up everywhere. Practically all such laboratories are manned by totally untrained or at most by poorly trained technicians, and it should be emphasized that there are no laws in the state which standardize or control technicians.

It would be perfectly possible, I am told, for a twelve-year-old boy without any training whatsoever to open a diagnostic laboratory and to conduct it legally, provided he does not offer any suggestions for treatment. I have seen a report from a chiropractic laboratory, made on an excellent printed form, which might have passed almost anywhere, save for one or two inconsistent findings. One of our own technicians just refused a large monetary offer to go with a commercial urine laboratory which deals directly with the public, and solicits business. Dr. Donaldson called my attention to a report from a "Physico-Clinical Laboratory for the Electronic Reactions of Abrams." I have a copy of it here. It is quite elaborate. I will read you parts of it.

"Physico-Clinical Laboratory * * * for the Electronic Reactions of Abrams by aid of the Reflexes of Abrams. * * *

"These tests will diagnose the very beginnings of disease long before clinical symptoms reveal it. * * *

"No diagnostic method is infallible. Correlate the Electronic Diagnosis with Clinical findings. Occasionally the two will be at variance. The former, however, will generally be bound to be the correct one. * * *

"Tests made for all disease. *Unless specially requested,* and without comment from the physician (in furnishing a brief history of the illness), only the following conditions will be sought: *Syphilis, cancer, tuberculosis, streptococci infection* and *colisepsis. Date examined:* Sept. 13, 1921. *Laboratory No.....* *Diagnosis:* Acquired syphilis (Bovine type). *Specific strain:* (Tissue involved, or will become invaded later) nervous, digestive and bones or joints. *Potentiality of energy* (Strength of the disease): 33 ohms. *Remarks:* Bovine type means the disease came from vaccination or serum treatment. The arthritis mentioned in your letter is always due to some infection, without eliminating the causative factor, there can be no curative means directed to the effects to amount to much in the way of relief.

"LABORATORY INSTRUCTIONS

"1. *How to prepare and mail blood specimens.* With sterile instrument, drawn blood from a vein, or lobe of ear; the latter is best effected with a blood lancet.

"2. *To avoid contamination* of the drawn blood, instruments must be boiled 20 min. (Use no antiseptics for this purpose.)

"3. *For sterilization* at site of puncture, use olive oil soap and water, then rinse with grain alcohol.

"4. *Transfer the blood onto white blotting paper* (free from printing or color) an amount equal to the size of a twenty-five cent piece.

"5. *Allow the wet specimen to dry in* a dark place and several feet away from pathological specimens, culture tubes, or other blood specimens—to avoid transmitting of radioactivity from other specimens (all substances are radioactive).

"6. *After the drying process,* enclose in a white or manilla envelope, free from printing or writing, excepting at edge of envelope, the physician will write his name and address and the name of the patient, age and sex, and then seal up.

"7. *Do not send more than one specimen in the same mailing envelope*—to avoid conferred radioactivity.

"8. *Suspend all treatment,* medical or physical, at least 48 hours before drawing the blood. Such drugs as Eosin, Gamboge and others locally applied must be removed with soap and water 48 hours before drawing the blood. Drugs and spinal manipulations or concussion annul the reflexes.

"9. *Warning:* Unless the physician heeds the aforementioned instructions, an erroneous diagnosis is possible.

"LABORATORY FEES

Blood examinations	$10 00
Reëxaminations to gauge the course of the disease	5 00
Examination of patients	25 00

"In each of the above examinations full instructions are given to the physician for executing Abrams' method of treatment.

Practical courses on spondylotherapy and electronic diagnosis and treatment	$200 00

"(Only reputable Doctors of Medicine are eligible to gain admission to the classes, which are limited.)"

This report was not made by a technician, but it does indicate that the public is demanding laboratory work and that it is up to the physician to aid the public in discriminating between good and unreliable laboratory methods. It is my opinion that this can be done in part by the establishment of a board to standardize, register and license technicians just as physicians and nurses are licensed.

By way of emphasis I should like to ask several questions which each of you may answer for himself: 1. Is laboratory diagnosis a fad or is it an actual help to you as clinicians in the diagnosis and treatment of your cases? 2. If it is a help to you, is it not better to do without any such information than to have unreliable information? 3. Do you think that, prepared as you are with several years of medical training, you can become accomplished pathologists, serologists, and bacteriologists after working for a year in somebody's laboratory? 4. Do you think that a nurse, a stenographer or a high school student who has no medical training can accomplish more in this line than you can? 5. Will you put your shoulders to the wheel to raise the standard of laboratory work generally and help to pass laws which will control a condition that is rapidly becoming a public menace?

I would ask that all get together. It seems to me there should be some means of legally controlling these people, and I think it should be brought to the attention of those who are in the proper situation to consider it.

Dr. Paul Lewis (Philadelphia): The question of the laboratory technician is complicated greatly by the work that these individuals are called upon to do. In the first place the demand has arisen by reason of the rapid multiplication of laboratory methods, as described by Dr. White. In the second place, young medical men are not directed to the laboratory in sufficient numbers—and largely by lack of proper remuneration. The practitioner of medicine must have a certain amount of laboratory work done, and in our opinion certain kinds of his work, such as blood counts and urinalysis, can be done by a well-trained technician in a very acceptable manner. I am sure that private physicians will find assistance of this kind very useful in their office work. The significance of an albuminuria is not up to the laboratory technician for discussion. That is left entirely to the physician. But I do maintain that a properly trained technician can properly examine the urine for albuminuria, and leave the interpretation entirely to the physician. I look upon the laboratory technician as I look upon the nurse. He is in the same relation—an assistant to the physician. He carries out the physician's directions and leaves it to the physician to give the orders and to place the interpretations. I am sure that the laboratory technician plays a very useful part in medicine to-day. The State Law of 1915, or 1916, requires state institutions to maintain in their laboratories full-time laboratory technicians in order to make sure that each institution would have a sufficient personnel in the laboratory for conducting the routine work of the institution. This has proved, I believe, very helpful.

I agree with Dr. Haythorn that there should be legal control over commercial laboratories or nonmedical persons conducting laboratories, because it is perfectly true that these individuals may put up laboratories and do very inferior work. But the laboratory technician, properly trained and working under the skilful eye of the physician or pathologist, certainly renders a very satisfactory service. We want more laboratory work done; that is the first thing; and to fulfill that and make that possible we must train properly qualified individuals to carry out this purely manipulative laboratory technic. For that reason I believe that the trained laboratory technician is a person that has come to stay, and that he will develop along broader lines in the future.

Dr. John A. Lichty (Pittsburgh): Dr. White has covered this problem, or question, in a very broad way. There is no use to refer to the broad principles which he has pointed out. It is simply a matter of application. Dr. Haythorn has told us that this technician, whom we all feel we must have is likely to go wrong, and then will either go into a hospital and set the standards himself, or go into a physician's office where the results are not checked, or may go into private work and present such work as Dr. Haythorn showed in his circular.

These conditions are all deplorable, and all that we need to do as a profession is to arrange in such a way that laboratory work can be done for a reasonable sum in a well-established, well-conducted laboratory—because the work *must* be done. If we do not furnish this, then the work will go on as Dr. Haythorn has suggested, so the burden after all is upon us.

Now, I believe that this burden should be carried through the hospitals. There are hospitals all over the state. They are pretty well distributed. They should be the censors for laboratory work, and that is the only place that this work can be well checked. There is in the State of New York at present a very well-organized system, which I think is going to do a great service to the citizens of New York. The state laboratory has control, and sets a certain standard for all the laboratories organized in the state. The laboratories can come up and qualify so that they receive the stamp of approval from the man who has charge of the state laboratory in Albany, and he is a very good man. As they qualify they are given the stamp of approval, and work is referred to these laboratories from various parts of the state. I believe that plan could be worked out in this state.

I do not believe we have given Dr. Baldy sufficient credit for the work he has done for the laboratories of the State of Pennsylvania. It has almost come up to this plan which New York has established. It was a work which was largely on Dr. Baldy's shoulders and was difficult to put through, and I doubt whether it will go on in sufficiency if Dr. Baldy is no longer back of that work. It is a larger problem than the work of one man. Now, if it is a question of salaries you might ask, "How can the hospitals do this?" That is a very pertinent question at this time, inasmuch as it has been ruled by the State Supreme Court that certain state laboratories are no longer eligible to receive state appropriation. How can the hospitals get along without the state appropriations and increase their influence and ability in this direction? I believe it comes down to a matter of finance, and that is probably the only problem or point I can bring to this discussion which may be worth while.

I believe that the laboratory work in the hospital should be charged for at a flat sum, a flat fee; and it can be done, if administered properly, for a very small amount—I mean all the laboratory work which will cover any case can be done for a small amount if a flat fee is charged. I am sorry I must refer to New York all the time, but in a certain hospital in the State of New York—a hospital of one hundred and seventy beds—where they have a biological chemist, well paid, it has been worked out in bookkeeping that it costs thirty-five cents a day for every patient in that hospital for the laboratory work if they do everything—x-ray and everything, thirty-five cents a day. Now, that is not prohibitive, and if a hospital will go at it in the right way I believe this work can be done in the hospitals and done well, and properly checked.

Now, if you go into the hospital—I need not refer to the organization you should have; Dr. Lewis has already referred to that—I will say a physician should be at the head of that laboratory, a doctor who is a qualified biological chemist, and he should be a man who has worked and gotten there in a proper way. He should be well paid, and he *can* be well paid if the proper fee is adjusted. I don't care by what means he goes, but the work should be checked by a man of that kind.

The reason why I think it should be a flat charge is that it will give better service to all the patients in the hospital. It is not a question of money, it is not a question of deciding whether a patient can stand this test or that test in a financial way, but every patient will have the advantage of all that is there, and if you don't have a plan of that kind you cannot do scientific work in any hospital. If you have a case in which you wish to do a piece of work such as will apply in any kidney case, and you say "the patient will stand five dollars for one laboratory test, but if I check this up with another and charge him another five dollars he will kick;" that immediately stifles research. Thirdly, it will prevent misunderstanding between the patient and the hospital (which is always unpleasant) if the patient leaves the hospital and receives a bill that seems excessive, and he does not understand it. It will be an easy matter if it is worked out in the bookkeeper's office. So, I do believe the hospital in that way cannot only carry its own burden but it can carry the burden of the community by making a small, nominal fee for laboratory work. I feel quite convinced of this, and I hope that hospitals can be induced to adopt this method, as I believe it will go far toward elevating the standard of our laboratory work; and I believe it will take us out of the difficulty which may come through the plain technician.

Dr. Walter F. Donaldson (Pittsburgh): I simply want to emphasize one feature brought out by Dr. Haythorn in the discussion of this paper. You all notice that the eminent scientist who made this diagnosis of "bovine syphilis" states that it develops as the result of vaccination or inoculation by serum. I call your attention to the fact that such statements as that going out from laboratories will give great comfort to the antivaccinationists and antivivisectionists. So not only for the safeguarding of the good name of the medical profession should we fight things of this kind, but we should remember that such statements are giving aid to the antivaccinationists and antivivisectionists.

Dr. White (in closing): I have only a few words to say in reference to closing the discussion. Dr. Haythorn has brought up four questions. He asks, "Is laboratory work a help or a fad?" Laboratory work should of course be a help, but I am sorry to say, as a laboratory man, that in the last few years it is getting to be a fad. There are getting to be too many questions asked of the laboratory regardless of how they are to be answered or the reason why they should have been asked. They have swung with the pendulum on the other side, and I am sorry to say, that many of our requests on our laboratories to-day might be looked upon as a fad.

The second question was, as to whether the information given should be reliable or not. Well now, there is no answer to that question. Of course, laboratory work should be reliable; and along that line I think that the answer—the silent answer when Dr. Haythorn was reading that—of every member of the State Medical Society was that anybody receiving a laboratory report of that kind could not do anything but condemn the laboratory giving it out. Personally I do not believe that any laboratory springing up for the pure purpose of making money ought to bother any member of the State Society. I think they ought to be far above nursing along such laboratories.

He asks a third question, and that is, "Can assistant technicians be trained in three months?" Under the heads into which I divided the subject a technician who is simply a helper can be trained to be of invaluable service in the hospital in the short time of three months. She is not to make a diagnosis. As I tell the advanced worker, that is a matter for the physician to work out for himself.

And the fourth question was, "Get together." I think that is the keynote of the whole thing. I think the whole medical profession wants to get together on this laboratory question, opposing the doing of useless laboratory work, and when it *is* done, seeing that it is done in such a way that there will be no further comment.

Dr. Lichty, I think, brought out the hospital side of the situation, which is a good one. It has been thought of here, and I believe worked out in the city of Philadelphia; and I believe that in the State of Pennsylvania there are enough good hospitals that have laboratories connected with them and with good, trained technicians, so that when one is asking for laboratory work he will get an efficient examination.

GOITER; FROM THE STANDPOINT OF THE CLINICIAN*†

C. E. ERVIN, A.B., M.D.

DANVILLE

The general prevalence of goiter and its unusually high incidence in some localities in the State of Pennsylvania makes this a subject worthy of consideration before this society. So far as I have been able to determine there has never been an accurate survey of the geographical distribution of goiter in the state. Foss[1] has called attention to the high percentage of goiter in the Cunningham and Central Susquehanna Valleys and in that portion of the state lying between Catawissa and southern New York; also along the Allegheny Mountain valleys, and through other valleys in Indiana, Westmoreland and Columbia Counties. We are all familiar with the goiter belt centering about the Great Lakes which extends eastward into Ohio and Pennsylvania. As pointed out by Kerr[2] there is an unusually high incidence of goiter in the Northwestern states, especially Washington and Oregon. In these goiter belts one notices the simple colloids during the period of adolescence and the adenomas and exophthalmics during the later years.

Function of the thyroid gland: The activity of the thyroid gland is carried on through the agency of its hormone. Normal growth and development are dependent upon the presence in the tissues of this substance, its congenital absence resulting in cretinism where both mental and physical development are almost completely absent. In later life, arrest of thyroid activity results in myxedema. Mild cases of cretinism are more or less common. They show lack of both mental and physical development, especially of the osseous system, are sluggish and apathetic, often failing to advance with their grade in school. These children are always constipated, have a slow pulse and slightly subnormal temperature. Later there is a lack of development of the sexual organs, lack of sexual desire and consequent sterility. In myxedema this same lowering of all cellular activity is noted, the metabolic rate often dropping to 40% below normal. Myxedema begins to appear when the basal metabolic rate drops to 17 or 18% below normal in thyroid deficiency. In this condition the thickened, leathery appearance of the skin is due to infiltration with watery, colloid-like substance. The hair is short, thin and stubby; the nails brittle.

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†From the Department of Internal Medicine of the George F. Geisinger Memorial Hospital.

An excessive amount of the thyroid hormone in the tissues, on the other hand, results in a speeding up of all cellular activity, with an increase in nitrogenous metabolism and heat dissipation. The basal metabolic rate may rise to 100 or more above normal and the clinical picture will vary from the normal to that of the highest degree of hyperthyroidism. In fact all symptoms referable to the thyroid gland may be attributed to a deficiency or excess of the thyroid hormone.

The latter is known to be an iodine compound. Bowmann in 1895 discovered in the thyroid gland an iodin compound and called it iodothyrin. Halsted's classical experiment, whereby it was shown that following lobectomy compensatory hypertrophy could be prevented by the administration of iodin, proved conclusively the relationship between iodin and thyroid activity. Kendall[3] in 1914 isolated the active principle of the thyroid gland, identified its formula, and named it thyroxin. Plummer[4-5] studied its physiological action and concluded that it is the active agent of the thyroid gland and the one which determines the metabolic activity of the individual cell. The latter is likely accomplished through an interaction with the secretory products of the other glands of the endocrine system. Kendall's[6] animal experiments rather confirm this conception of the multiplicity of thyroxin activities. He found by injecting goats with daily doses of 14 mgs. of thyroxin that death resulted in from eleven to thirty-five days; but when a goat was given one injection of 230 mgs., or more than one and one-half times the amount required to kill the first animal, that almost no demonstrable effect was noted. From this observation it is quite evident that the thyroxin molecule *per se* is not toxic and that its action is more dependent upon secondary reactions, likely in conjunction with other endocrine products.

That such a relation does exist between the thyroid and the other glands of internal secretion goes almost without question. Mention has already been made of the relation of the sexual apparatus to hypothyroidism. Cannon and Cattell[7] have shown that when adrenalin is injected into a cat it evokes an action current of the thyroid gland, such as is seen after stimulation of the cervical sympathetics. I have noticed in two patients brownish pigmented spots following thyroidectomy, suggesting some disturbance of adrenal secretion. Goetch's test, for a while carried out as an aide in thyroid diagnosis, has its explanation in the relationship between these two glands.

Just what the pathological stimulus to the thyroid is that results in an abnormal thyroxin output, we do not know. Neither do we know its origin. Its determination is the next step to a thorough understanding of thyrotoxicosis. Cannon and Cattell[8] showed that the thyroid gland is supplied by the cervical sympathetics and that the latter act as true secretory nerves. Wilson[9] and his collaborators have made observations tending to show that stimulation may result from disease of the cervical sympathetic ganglia. Keilty[10] has studied a large number of thyroids and demonstrated bacteria in a majority of cases strongly suggesting an infectious origin.

The term goiter is a very indefinite one, being applied to any appreciable enlargement of the thyroid gland. From a clinical standpoint goiter may be classified in three groups: 1. Colloid of Adolescence; 2. Exophthalmic, and 3. Adenoma. The simple colloid goiter is most often found in young girls (6 to 1) during the age of adolescence and is a type of enlargement often seen during the menstrual periods or pregnancy. The gland is soft, uniformly enlarged, and consists essentially of a distention of the normal acini with watery colloid. This storage is due to a physiological stimulation of the thyroid in the absence of sufficient iodin (Plummer). This type of goiter is rarely accompanied by constitutional symptoms, responds fairly well to medical treatment and almost never calls for surgical interference. While the goiter usually disappears, there frequently remains a small adenoma that has originated from the embryonal cells as a result of the same stimulation that caused the colloid excess. It is the adenoma that may give trouble later in life.

That colloid goiter of adolescence can absolutely be prevented is claimed by Marine[11] and his coworkers. According to this author the administration of five grains of potassium iodide three times a day for a period of two weeks twice a year prevented the formation of goiter in over 99% of the school children of Akron, where the experiment was tried. Twenty-one per cent of those not receiving the prophylactic treatment developed thyroidal enlargement during the thirty months of observation. The iodin given as described above caused a decrease in 65% of the enlarged thyroids, as contrasted with 13.8% among those not treated. This work seems to show conclusively the reliability of the prophylactic treatment and the help that may be obtained for the developed cases. This prophylactic treatment is more impressive when we remember that adenomas frequently develop coincident with the colloids and remain to cause trouble in the third or fourth decades of life. We have treated several cases of colloid goiter during the past year with potassium iodide as outlined by Marine, with no appreciable reduction in the size of the gland, but our series is too small to permit of any conclusions.

Exophthalmic goiter is the term applied to that type of hyperthyroidism most frequently met with in young women between the years of 16 and 36, and, as the name suggests, is usually associated with exophthalmos. The gland, as a rule, is only moderately enlarged. Now and then one meets with an extremely toxic case with but little if any appreciable enlargement of the thyroid gland—a point always to be remembered in thyroid diagnosis. Fourteen per cent of our series of 530 cases were of the exophthalmic type. The average age was 33 years, with an average duration of goiter of three and one-half years, and of nervous symptoms eleven months. These patients rarely consult their physician till after the symptoms are well advanced; consequently fewer errors in diagnosis are made in this group than in the others. While basal metabolism determinations have offered a refinement of diagnosis in questionable cases it is not often necessary, and is never so valuable as the judgment of the man skilled in thyroid diagnosis. A persistent tachycardia, irritable nervous system, tremor and sweating, loss of weight, exophthalmos and the presence of thyroid enlargement, with the associated thrill and bruit, are all cardinal to the picture. This complete chain of symptoms, however, is not always present. The thyrotoxic substance of exophthalmic goiter has a predilection for the nervous system. No part of it seems to be spared but the sympathetic system gets the worst of the damage. Cardio vascular symptoms soon develop.

The treatment of these cases amounts to a highly specialized art. There is a good deal of controversy between a few internists, surgeons, and roentgenologists as to the best method of treatment of exophthalmic goiter. It seems to me that the best results are obtained by the man who goes about the treatment of these patients with an open mind, willing to accept whatever may be of the most service to his patient. The medical or preoperative treatment is of the utmost importance. This consists of absolute rest in bed, nerve sedatives and digitalis as required, freeing the patient of mental anxiety, meddlesome relatives and curious visitors till the patient's nervous symptoms have quieted down sufficiently to render a polar ligation safe. The metabolic laboratory is of the greatest service in determining when this time has arrived but cannot be relied on absolutely. The surgeon who fails to take these preoperative precautions is bound to have a high mortality rate and to place the operative treatment of toxic goiter in a bad light. When guided by these precautions thyroidectomy is a very safe form of therapy. One hundred and twenty-five consecutive thyroidectomies have been performed at the Geisinger Hospital since the last death, giving a mortality rate of less than 1%. In this series there were 171 thyroid operations, including ligations and two-stage thyroidectomies. Radium or roentgen rays are sometimes used to great advantage to decrease the gland's activity preparatory to operation. Radium recently served us well with a patient who was exceedingly toxic and who was rapidly going down hill in spite of four months of medical treatment. A ligation was out of the question. Within four weeks after the application of radium the patient had improved to such extent that a double ligation was performed with safety. After a bipolar ligation our patients are sent home for six to eight weeks, when they return for a subtotal thyroidectomy, performed in one or two stages as may be indicated.

In this connection the wisdom of removing infected teeth or tonsils or clearing the mouth of gingival infection should be mentioned.

Mention has already been made of the x-ray and radium in the treatment of exophthalmic goiter. Pfahler[12] reviewed the literature on the subject in 1916. Holmes and Merrill[13] reported the result of treatment of two hundred and sixty-two cases. Thirty-five of the total showed very definite improvement. Sixty-eight showed definite improvement but retained some manifestations of the disease. Fourteen did not improve. One case developed myxedema, possibly as a result of treatment. These writers warn against the possibility of complete destruction of the gland; of the danger of telangiectasis, atrophy and disfigurement; also of the possibility of a dangerous increase of toxicity by the first treatment. Russel Boggs[14] states that he has obtained excellent results from irradiation of the colloid goiter of adolescence, as well as with the toxic goiters, and that after twelve years none of the colloids have shown adenomas or degenerations. According to Means and Aub[15] these patients show a metabolic rate of about 13% above normal at the end of three years. Those patients treated surgically show a more phenomenal drop but they later suffer a slight relapse so that at the end of three years the results of both types of treatment is about the same from the standpoint of basal metabolism. The economy of time spent in convalescing must be considered. The patient treated surgically will usually return to duty sooner. This same factor must be considered in connection with prolonged medical treatment. Exophthalmic goiter has a tendency toward self-limitation but it requires a number of years for the patient to recover completely; while many of those patients who are allowed to follow their own course will be invalided for life and others will die outright.

The third and final group of goiter we have to consider is the adenomatous form with its associated cystic and other degenerative changes. It is this type of goiter that most often confronts the physician practicing medicine in Pennsylvania and, in view of the often associated hyperthyroidism, it is perhaps the most important. Seventy-four and five-tenths per cent of all cases of goiter applying at the Geisinger Hospital belonged to this group, seventy-nine per cent of which had exhibited evidences of damage either to the cardiovascular, or nervous system, or to both. The average age of the toxic group was thirty-eight years, with an average duration of goiter of 14 years and of nervous symptoms two years and one month. It appears, therefore, that these patients possess their goiters on an average of twelve years before signs of intoxication are noted. In the nontoxic adenomata, on the other hand, we find the average age to be 33 years and four months, with a history of goiter for eight years and nine months. We see, therefore, that these patients applied for treatment four years and nine months earlier than did the toxic group, and that the goiter had been present only eight years and nine months as contrasted with twelve years that the goiter had existed in the toxic cases before symptoms of poisoning had become manifested. It is but natural to assume, therefore, that many of the nontoxic adenomas, if untreated, will ultimately become toxic and produce degenerative changes in the heart muscle, blood vessels, kidneys, etc. Error of diagnosis is common with the toxic adenoma. Not infrequently have we seen patients referred for the treatment of heart disease when the cardiac symptoms were due to damage from an unrecognized adenoma.

In patients suffering from toxic adenomas we find symptoms referable particularly to the cardiovascular and the nervous systems. There is frequently found a hypertension. One of the first blood pressure changes that takes place secondary to myocardial degeneration is a fall in the diastolic pressure (Plummer). Later the systolic pressure may fall to a level commonly found in normal individuals (Foss), giving a rather deceptive impression of the true condition of the cardiovascular system. A heart so extensively damaged, however, is usually manifested by other signs, such as a thready pulse and arrhythmia. Even in cases of such extensive myocardial damage the basal metabolic rate is occasionally found to be normal. The nervous symptoms at times are just as marked as in the exophthalmic patients.

The treatment of the adenomatous goiter is essentially surgical. The pressure symptoms, so commonly complained of in all these cases, and the deformity can only be relieved by removing the tumor. The same preoperative treatment must be observed in the toxic cases as described for the exophthalmic patients. In fact the risk with some of the extremely toxic patients is greater than with the exophthalmic group. Grier[16] reminds us that the application of x-rays will relieve the symptoms of hyperthyroidism in these cases preparatory to operation. The size of tumor, however, is not affected by the rays. I wish to emphasize this one point about the adenomatous goiter: a large percentage become toxic if the patient is allowed to keep them long enough, and the laity, as a whole, is grossly ignorant of the damages that the goiter produces. Consequently it is the responsibility of the family physician to correct this mistaken idea; to tell his patient that the nervousness or shortness of breath are resulting primarily from the goiter and that it should be removed so as to spare the cardiovascular, nervous, and renal systems the damage that is almost certain to follow if it is allowed to remain. The degree of success of thyroidectomy depends upon the degree of degeneration that has been allowed to take place before the removal of the cause. The case is analogous to valvular heart disease secondary to tonsillitis. Removal of the tonsils may stop further damage but will not repair that already done.

The question that the clinician has to answer is: what form of treatment shall we recommend for our goiter patients? I believe the consensus of opinion to-day is that surgical therapy, either alone or in conjunction with radium or x-ray, offers the exophthalmic and toxic adenoma patients the best and certainly most rapid road to recovery. I am convinced that this form of treatment can be relied upon almost to a mathematical certainty, provided it is practiced before irreparable damage has been done to the heart and nervous systems. It is true enough that a good many thyroidectomized patients continue to show some signs of toxicity. It is also true that we occasionally see a postdiphtheritic paralysis even when the antitoxin has been used. In both incidences the delay and not the therapeutic agent is to be blamed.

At this place might be mentioned some of the rarer diseases of the thyroid gland. Suppurative thyroiditis has occurred twice in over 8,000 general patients treated at the Geisinger Hospital. One case occurred in a young girl 13 years of age with a colloid goiter. The patient had not suffered recently with tonsillitis, although it had been necessary to remove the tonsils six months before because of persistent sore throats. The trouble began suddenly. The gland was moderately swollen, red and painful and contained large quantities of pus.

The second case was a woman 65 years of age with multiple cystic adenomata who had suffered such advanced myocardial degeneration as to prohibit operation. This patient suffered an attack of tonsillitis which was followed in twenty-four hours by suppurative thyroiditis. Pus was aspirated on the fifth day, which showed streptococcus hemolyticus in pure culture. The abscessed gland was drained in each case and recovery was uneventful.

Tuberculosis of the thyroid gland is rare, except in cases of generalized miliary infection. The majority of tuberculous infections in goiter are in the hyperfunctioning ones. This has been the case both at Rochester and in Crile's Clinic (Plummer & Broders; Mosiman) and the diagnosis is usually made by aid of the microscope.

Syphilis is one of the rarest diseases of the thyroid gland. Schneider[17] reviewed the literature and found that only 23 cases had been reported. He added one case of his own. The latter, a woman 68 years old, had a gumma of the thyroid. She gave a history of syphilitic infection and she apparently had had an adenoma for some time.

It is hard to determine just what percentage of goiters become cancerous. In our own clinic we have an average of about 1%. Crile feels that the percentage will run as high as 4%. This figure may vary in different goiter belts. Pressure symptoms are usually more pronounced and more rapidly progressive than those met with in adenomas. The tumor is very hard and nodular. The prognosis is poor. Radium and x-ray offer about the only hope for prolonging life.

CONCLUSIONS

To summarize:

1. The activity of the thyroid gland is carried out through the agency of its hormone, thyroxin. Normal growth and development are dependent upon the presence in the tissues of this substance, a deficiency resulting in hypothyroidism and an excess in hyperthyroidism.
2. The mechanism of thyroid activity is a complicated one and is probably dependent upon secondary reactions with the products of the other glands of the endocrine system.
3. The pathological stimulus that results in hyperfunctioning of the thyroid gland is not definitely known. It may be an infection of the thyroid gland.
4. The colloid goiter of adolescence is common in young girls, is unaccompanied by symptoms, usually disappears of its own accord, but may leave behind a troublesome adenoma that has developed coincidentally with the rest of the goiter.
5. The colloid of adolescence is apparently preventable by the administration of iodin during childhood, twelfth to seventeenth year. The adenomas may be preventable by the same means.
6. Exophthalmic goiter is treated most successfully by a combination of rest and surgery. Radium or x-ray may be useful in some cases.
7. A large percentage of adenomata become toxic, causing especially cardiorenal degeneration. The treatment is surgical.
8. Suppurative thyroiditis is rare, occurring only twice in over 8,000 general patients.
9. Carcinoma has occurred in 1% of goiter seen by us.
10. Tuberculosis, except in generalized miliary infection, and syphilis are rare diseases of the thyroid gland.

Note: It is a pleasure to express my gratitude to Dr. H. L. Foss for his assistance in collecting the material for this paper and for his valuable suggestions.

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DISCUSSION

Dr. M. Howard Fussell (Philadelphia): The excellent paper which has just been read by Dr. Ervin can scarcely be improved. I wish, however, to call attention to three or four points.

I fear that one sentence of Dr. Ervin's paper may give a misconception of what I am sure he means. He states that the treatment of colloid goiter is rarely surgical. This is certainly true in the colloid goiter of adolescence; but the colloid goiter is full of danger to the adult, is rarely amenable to the administration of iodine, is likely to become toxic by the formation of adenomata, causes danger from pressure and from malignant degeneration.

I believe with Dr. Ervin that the adolescent goiter practically never needs surgical treatment. Its treatment is preventive as shown by Marine and his coworkers, and such adolescent goiters may disappear by the administration of small doses (not large doses) of iodin. The *adult* goiter of the colloid variety, especially those which develop tumor formation, is very frequently, indeed I believe as a rule, a surgical condition. I am sure Dr. Ervin means to state the question so.

I agree with Dr. Ervin that exophthalmic goiter, so called, is entirely a different condition from the simple colloid goiter. One of the greatest faults in the treatment of this condition heretofore has been the lack of *early* diagnosis; many individuals have died from toxic goiter, with and without treatment, whose lives could have been saved if the condition had been recognized early. How many individuals have we treated for months or for years for nervousness, for functional palpitation, for hysteria, who are really in a curable stage of thyrotoxicosis? All of our young women who give these symptoms of nervousness, palpitation, etc., should be looked at in the light of a possible toxic thyroid, and should be given the benefit of a careful physical examination first, and this accompanied by a carefully conducted laboratory investigation.

Of all the methods of laboratory examination which separate toxic goiter from conditions which it simulates, careful estimation of basal metabolism is the most important. This basal metabolism estimation should be made by an individual trained in the use of the instrument, and not by anyone who has not had a sufficient training in this highly specialized work.

A basal metabolism which is continuously 15% or more above normal, is to my mind a certain indication of a hyperactivity of the thyroid gland. Anyone can make a diagnosis of hyperthyroidism in an individual who has all the characteristics of exophthalmic goiter, the treatment of which is a danger to the patient. A patient with a well-marked exophthalmic goiter is much in the same position, so far as treatment is concerned, as a patient with a two weeks' old appendicitis with abscess. He is in great danger of losing his life, not because of an operation which may be performed, but because he is septic, and great harm has been done because the case has not been recognized early and operation performed early. So the exophthalmic patient not recognized early is in great danger, because of the perhaps irremediable harm done to his heart, his vessels and his nervous system. Therefore, early diagnosis is the necessary element in all toxic goiters, and the application of appropriate treatment before the damage has been done.

As to the treatment of the developed case of exophthalmic goiter: I fully agree with Dr. Ervin that the safe man to treat is the one who carefully examines his patient first and who is not hidebound as to any particular form of treatment. Certainly I agree that the majority of cases are best treated surgically by ligation or lobectomy, and that practically every case must have a preliminary period of true rest treatment applied, preferably in a hospital, before surgery is practiced. The x-ray is valuable in many cases, but it is not free from danger. Increased and fatal intoxication may result from too vigorous treatment in severe cases, and myxedema may occur by overdosage.

A certain number of even severe cases will recover by the use of rest alone, but unless rest has a prompt effect it must be supplemented by the use of surgery or x-ray or both.

Dr. John A. Lichty (Pittsburgh): I think that Dr. Ervin's is a most remarkable paper, because it comes from a surgical clinic. The Geisinger Memorial has a reputation for good surgery; and to have a broad-minded opinion come out of a hospital of that kind is, I think, really very commendable. I would agree with everything that Dr. Ervin has said, and also with what Dr. Fussell has said in opening the discussion. There is only one point that I might take exception to (and I do not believe that Dr. Ervin meant his opinion to be considered as final in that), and that is his reference to his experience with the use of iodin in cases of adolescent goiter.

Twenty-five cases is not a large series, and yet it is large enough to observe and see what is taking place; but the work upon which Marine established his opinion was on a large series of two thousand cases or more, over a number of years, using the iodin before the goiter appeared and also using it in cases in which it had already occurred, and showing that in those in which it had not occurred the incidence was not so great later as in those in which the patients did not take the iodin. He has tabulated the school girls of Akron High School for a number of years, and can tell what might be expected to happen in them, and that as the result of the use of iodin, it does not happen. That is a strong argument.

I could say the same, from my own experience, as Dr. Ervin has said. I cannot tell that I have done any good with the use of iodin in the cases of adolescents; but it is not yet time to draw conclusions. I hope, therefore, that this point will not be misunderstood, and that the use of iodin will be continued.

Another point I should like to make is with reference to goiter areas. Of course, I am not able to tell, from my own experience about the goiter areas in the United States, because I have not been all over the United States. But I am somewhat impressed that the goiter areas travel with the goiter interest shown by the various clinics. I think that the goiter area in Pennsylvania begins in the vicinity of Sayre, and comes down until it strikes Danville. Probably, after a while it will strike Pittsburgh! I think it is striking central Ohio now. A textbook recently came from that part of the country. I cannot see, from my limited observation, that there is his great preponderance of goiter in one part of the country over another. I was in Switzerland, where goiter does prevail; there is no question about it. You can see it everywhere. Even the layman notices it. Two people out of every three have enlarged thyroids. I have not seen such a preponderance in any community in the United States. We know that it is said to be endemic along the Great Lakes, and we know why. I do not believe that we should accept that view quite so definitely as it is given to us.

Another point is with reference to the x-ray. I hold no brief for the x-ray treatment of goiter; I only know that there are some cases that cannot be treated safely in any other way. For instance, there was a case that I saw in April, with a basal metabolism of 100 per cent plus. She could not be operated on. The patient was brought to the hospital and treated with the x-ray. She now has a basal metabolism of five plus. Other cases which could not be treated in any other way could be by the x-ray. One of these cases is so improved now that she is coming to operation.

Dr. Albert E. Roussel (Philadelphia): The available statistics regarding the use of iodin, both as a prophylactic against goiter and in the early stage of this condition are now developed sufficiently, it would seem to me, not only in Switzerland but also in this country. The reports of Marine, just mentioned, cover about three thousand cases, and some of the French authorities now have followed the same line as in Switzerland. It would seem to be an important thing to be followed up by the whole profession. After all, exhibition of iodin for two weeks' time in each six months over a period of three years should be important. If statistics of the United States Army Board are correct, the number of goiter cases in the United States is very decided. Iodin has come to stay. In the prevention, it is a question whether that prophylactic treatment should not be instituted in goitrous localities among the school children. No harm can come from it.

A distinction should be made between the adenomatous and other forms which become toxic, and the parenchymatous type, which is usually primary, or exophthalmic goiter. As a rule, the basal metabolism is distinctly less in the secondary types. If we are to accept the work done in that particular connection, the exophthalmos is less often present, and the thrill is less, but you have the tremor and other disturbances.

I am not a surgeon, and am rather opposed to the indiscriminate use of surgery in all of these cases; but there are cases in which surgery seems to be the only remedy. I think that the distinction should be made between the secondary types which become toxic goiter, and the primary, or exophthalmic goiter. Dr. Pfahler's first cases, I imagine, were those with which I was associated. I have a record of twenty-seven cases with which I was associated that were treated by the application of intensive doses of x-ray. It is possible that ordinary doses produce a stimulating effect. The dose should be intense enough to cause partial necrosis of the gland, and is given only about once a month. I would recommend that after a period of preparatory treatment, these intensive doses be administered in toxic cases, particularly of the primary group. There is a reaction not infrequently; but our series, extending over seven years, shows a proportion of forty-seven per cent of actual cures out of the total number, and a much larger proportion in the primary group—some with a duration of seven years—which compares most favorably with the results of surgery and has fewer disadvantages. I feel strongly upon this subject. Basal metabolism studies prove it conclusively. A prominent surgeon contends that sometimes too much tissue may be destroyed, and myxedema result. Very few such cases are on record, and it only proves the action of the x-ray, as in other instances where too much of the gland has been removed by operation.

Dr. Robert A. Keilty (Danville): Attention might be called to Dr. Ervin's paper from two standpoints. First, at the present time his conclusions may be said to represent not the last word but the representative word of the men who are doing much of the goiter work throughout the country. I know that Dr. Ervin has had an opportunity to study personally a large number of cases, and at the same time, in the preparation of this paper, has covered practically all of the available literature to date.

Secondly, attention should be directed at this time to one phase of the subject which has not been cleared up, and that is the etiological factor or factors in the development of goiter. The term "goiter" probably occupies the same position toward thyroid disease that the term "Bright's disease" does to the kidneys. The term "goiter" covers a number of pathological lesions which are not related to one another. The pathology of adolescent goiter is entirely different from that of the adenomatous forms or the exophthalmic types. There seems to run through all, however, a thyroiditis. Bearing this in mind, the possibility of an infectious origin in these cases is quite likely. This is not a new idea, since we find bacterial infection in relationship to goiter mentioned in numerous places in the literature.

In our laboratory, considerable work has been done along this line, some of which we presented before the Pathological Society of Philadelphia. We believe that organisms of the streptococcal form, often anaërobic in type, in association with other organisms similar to a group found in the flora of the tonsils, may be the exciting etiological factor in all forms of actual thyroiditis.

Dr. Ervin is to be congratulated on the clear and concise manner in which he has presented the subject of goiter, the conception of which is, at least in places, somewhat cloudy.

Dr. Ervin (in closing): It seems to me that very little is left to be said. We have been able to make a very good showing in our goiter work and we have been greatly assisted in this by the coöperation of physicians referring goiter patients. The result is that we are getting a majority of the cases before they are hopelessly toxic. Consequently we can do a great deal more for them.

Both Dr. Fussell and Dr. Lichty have emphasized the importance of prophylaxis of the colloid goiter. Dr. Lichty has interpreted my remarks, concerning our failure to cause a reduction in the size of the gland by the administration of the iodides, correctly. We will continue to give iodide or thyroxin in these cases until we are convinced of their value. We can surely be of service to the community by giving the prophylactic treatment.

I wish to thank Dr. Fussell and others for taking part in the discussion of this paper.

ACHYLIA GASTRICA*

JOSEPH SAILER, M.D.

PHILADELPHIA

If achylia gastrica consisted only of deficient secretion of the gastric juice and this deficiency of secretion would be, as it is, partly or completely relieved by the administration of an artificial gastric juice, it would count as an unimportant medical condition, for it is not usually fatal nor as a rule does it seriously impair nutrition. Many cases of achylia are distinctly overnourished. It is rather because the condition is often associated with various complications that render life miserable, because it presents problems in differential diagnosis, the correct solution of which is of the utmost importance for the health and even the life of the individual, that it requires careful study.

Properly speaking achylia gastrica is in itself only a sign of a diseased condition, for it may occur in many other conditions, namely, carcinoma of the stomach, pernicious anemia and wasting infections, although even in these states the normal gastric secretion may sometimes occur. It may be defined as the persistent absence of free hydrochloric acid and the gastric ferments in the contents of the stomach. It is even more than this, for there is actually a deficiency of free hydrochloric acid that is equivalent to an amount represented by a few to 20 or 30 c.c., or even more, of decinormal hydrochloric acid solution.

It was shown years ago by Jaworski that the cessation of the gastric secretion in these cases is partly functional and is possibly due to the inhibition of the secretion of hydrochloric acid. At least the administration of the hydrochloric acid test meal and its withdrawal 15 minutes later causes the active secretion of the peptic ferments. This I have confirmed so often that I rarely make the test. I may mention parenthetically that the same condition is found in cancer of the stomach. The administration and rapid withdrawal of N/50 solution of hydrochloric acid often temporarily restores peptic secretion of the stomach.

Abnormal constituents are rarely found. Lactic acid cannot as a rule be demonstrated. This is probably due to the fact that in the majority of these cases of achylia gastrica there is rather rapid emptying of the stomach and in consequence, there being no stagnation, lactic acid ferments do not occur. Yeast cells are occasionally present. Some years ago I cultured many of these cases upon media containing 1 per cent of tartaric acid. In a majority of cases there was an abundant growth of yeast cells. Other organisms of course do not grow well in acid media. Oppler-Boas bacilli are not present. They depend upon hypomotility or rather prolonged retention of the gastric contents in the presence of fatty acids and therefore do not develop.

There are a number of interesting symptoms, which like all the other factors, are not pathognomonic but often strongly suggestive. An acid taste in the mouth is often present. As nearly as I can determine from statements of the patients it is not a sour taste only, but is sometimes sour, sometimes bitter and sometimes apparently a combination of both. It is usually associated with a burning sensation of the tongue and often of the rest of the mouth. It is worse as a rule in the morning and sometimes produces a very extreme degree of discomfort. Ordinarily the tongue is clean and sometimes a bright red, resembling the tongue of pellagra or sprue but not often as shining; that is, it does not indicate the denudation of epithelium. The mouth may also, probably as a result of these conditions, be distinctly sore and the patients then may suffer in nutrition on account of the dislike for food. Diarrhea is exceedingly common. A small proportion of the cases suffer from constipation. The stools are usually liquid, sometimes soft, often offensive but under neither microscopical nor chemical examination do they show any particular unusual nor abnormal constituents. As a rule there is little griping with these movements and consequently the patients complain very little of the diarrhea, often not mentioning it until asked about it. In the early stages there is emaciation, moderate anemia of the secondary type and the patients complain of being easily fatigued. As I have previously noted, this does not necessarily persist. Even without treatment they may recover from this stage and become actually fat, usually as a rule without very much energy.

The mental disturbances that occur in achylia gastrica are quite characteristic. They occur in about one-third of all patients in moderate or even severe forms, and in many of the others it is obvious that at least to a slight degree they are present. It may be described as an anxiety neurosis. I am probably not enough of an alienist to give it the proper designation. The patients are concerned about their health and they fear to undertake anything lest their health be in any way jeopardized. They are continually fearful that they are not eating the right things, that they are not living in the right way, that they are growing worse instead of better and that not enough is being done for them. They are particularly timid about undertaking anything, they are afraid to attend to their business or go on a business trip alone. Patients fear to leave their homes and sometimes are anxious lest in their homes they are not getting the benefit of climatic treatment. Financial matters seem to worry them unduly, even when there is no particular reason. An undue effort is regarded with apprehension at first and if it is undertaken the patient continuously complains that it has weakened him or done him harm. They are not only miserable themselves but very often inflict this misery upon the others who surround them. Even in men who are actually and successfully engaged in business and who suffer at the same time from achylia gastrica, this anxiety manifests itself in a variety of ways. Many of these patients are also subvirile, which adds to their anxiety and apprehension.

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A curious relation exists between the gall bladder and achylia. Very frequently these patients present gall bladder symptoms but apparently have no gall bladder disease. In addition it seems not unusual for gall bladder disease to occur in association with achylia gastrica. This is probably because the duodenal contents have not been sterilized by the free hydrochloric acid in the stomach. It is a point upon which further investigation is desirable. In the former case, that is simulation of gall bladder disease, there is usually tenderness on the right side of the epigastrium over Murphy's point and sometimes, but not always, in the right costovertebral angle. A palpable gall bladder cannot be detected. The duodenal contents are practically normal in all respects. The x-ray fails to give a shadow for gallstones. Unfortunately there is no difficulty in appreciating the fact that the differential diagnosis is not easy. Exactly the same group of symptoms may be present in cases of actual disease of the gall bladder. The symptoms are usually quite characteristic. The patients have attacks of pain, chiefly in the right upper quadrant, often quite severe but rarely agonizing. These attacks may last for a few hours or several days and there is very often more or less continuous discomfort in the hepatic region. There seems to be no way to make the differential diagnosis between active gall bladder disease and the simulated gall bladder disease of achylia gastrica. I am in hopes that the examination of the duodenal contents according to Lyon's method will throw considerable light upon this subject. Up to the present time in my own experience it has not done so; and this experience is that of the majority of men who are using it, for the subject was discussed at the last meeting of the Gastroenterological Association and it was practically universally admitted that definite diagnostic information could not yet be obtained.

A rare complication is persistent headache. This headache is usually of a diffuse agonizing nature lasting for hours at a time. It may or may not be associated with photophobia or dizziness. The nausea is not more than one would expect to be present with manifestations of such severe pain. In itself the headache has no distinguishing characteristics, but in the majority of these cases it can be controlled by treatment directed particularly to the stomach, that is the administration of large doses of hydrochloric acid and pepsin.

The differential diagnosis of achylia gastrica from various conditions which simulate it, in the majority of cases is difficult, and unfortunately at the same time very important because nearly all these other conditions are of an exceedingly grave character. They are, first, carcinoma of the stomach; second, progressive pernicious anemia; third, sprue, and fourth, gall bladder disease. It is impossible to go into the differential diagnosis completely in a paper of this character. In many cases of carcinoma of the stomach a diagnosis can be made without difficulty, particularly if the growth is advanced. It is only in those cases in which there is no tumor, little or no blood from the stomach, moderate anemia, moderate wasting and vague indigestion that the differential diagnosis becomes difficult. I am sure that in some cases at the present time it is even impossible and, of course, in these cases the question arises whether to operate on the basis of a suspicion or to wait developments in order to see if a simple achylia is not present. As I have said, the presence of lactic acid, of Oppler-Boas bacilli, of evidence of gastric retention are all strongly in favor of carcinoma. The hydrochloric acid deficit in the two conditions is about the same. The Jaworski test in my own experience is positive in both. The other tests for carcinoma of the stomach, such as the glycyltryptophan, the tryptophan, the soluble albumin, the miostagmin, and the discoloration of the methylene blue solution are all doubtful. That is to say, at most it can be said there is a slightly greater percentage of positive results in carcinoma than in other conditions, and even this is not demonstrated. I secured the miostagmin tubes and did a number of tests with them and could never find that they were of any value at all. Smithies has performed a great number of tests with glycyltryptophan, tryptophan and soluble albumin. The figures are published in his work on "Cancer of the Stomach" and they are far from encouraging one to use these tests.

Equally futile, apparently, is any attempt to study the blood. There is a slightly greater percentage of high white cell counts in carcinoma of the stomach than in achylia gastrica but it is so slight that it is of no particular value. Constipation is more apt to occur in cancer and diarrhea in achylia, but no definite diagnosis can be based upon either. In achylia, occult blood in the stomach contents or in the feces is rare but occasionally it is present. The presence of pus in the gastric contents has been urged as a sign of carcinoma, but this is not generally accepted and my own investigations indicate that pus is quite frequently found. Indeed, it is almost impossible to exclude sources of pus in the upper respiratory passages that could easily get into the stomach, and therefore I feel that the differential diagnosis, important as it is, can only be made, if at all, after very careful tests of these cases. The differential diagnosis of pernicious anemia is not so difficult. As a rule the blood studies serve to make it at once. The history is not so helpful, as there may be gastric disturbances preceding the appearance of the characteristic changes in the blood. The analysis of the gastric contents is practically the same. The symptoms of gastric disturbance are practically the same excepting that diarrhea is as a rule less. The patients with pernicious anemia are rather hopeful than anxious. They at least exhibit none of the typical neurosis found so frequently in achylia. The evidence of gall bladder disease is rarely present. Headache is uncommon. Therefore, there is rarely any doubt is distinguishing between these two conditions.

Sprue is perhaps more difficult than pernicious anemia. The bright red tongue, the sore mouth with a disagreeable taste, the diarrhea, are all present. My experience in sprue has been small —a few cases only, all imported into Philadelphia. They have all been severe cases with frequent stools, great emaciation, usually with hypersecretion of the gastric juice and only a moderate reduction in the count of the blood. The differentiation between these forms and achylia gastrica never arose, but others have described cases of sprue with the absence of free hydrochloric acid in the gastric contents. In these cases the differential diagnosis is comparatively fairly difficult. The fact that sprue is endemic in a locality or that the case has come from a place where sprue is endemic and the diarrhea is of a severe and wasting character, that the stools contain an excess of fat, that the supposed characteristic fungi can be determined and that the patient shows a tendency to improve on the administration of pancreatin and calcium, as advised by Dr. Brown of Baltimore, would be the chief determining factors. The question of differential diagnosis between achylia gastrica and gall bladder disease I have already discussed. It will suffice here to state that unquestionably sometimes it is not latent, because operation is performed in these cases and only a normal gall bladder is found.

Treatment of achylia gastrica is comparatively simple. Apparently there are no dietetic restrictions. These patients may eat everything excepting spoiled food. Against this they must be guarded because they are particularly susceptible to ptomaine poisoning and therefore sea food should not be given during the hot weather at any distance from the seashore. Canned sea food is also dangerous. Laxative foods such as prunes, rhubarb, etc., should not be given. Hydrochloric acid is the specific remedy, not in the sense that it cures the patient, but it keeps him fairly well. Ordinarily the dose is small. Even as much as a dram, 4 c.c. of the dilute acid, well diluted, can be taken before meals without any serious discomfort. It seems more efficient taken just before the meal than afterwards, but given either way it does good.

There are two other questions upon which there is a difference of opinion. First, the advantage of adding a good preparation of pepsin to the hydrochloric acid. There can be no doubt that in solutions of pepsin with the proper amount of hydrochloric acid, digestion takes place very rapidly *in vitro*. There is no doubt either that after the administration of a proteid test meal given with the hydrochloric acid and pepsin, activity in the gastric contents is higher than it is in the Ewald test meal. In cases of achylia there has been no evidence presented that pepsin is in any way harmful. It is uncertain, however, that the amount of digestion that can be done by the small amount of pepsin, ½ to 1 gram, that can be administered with the meal, is of great benefit to the individual. Nevertheless, I have reached the conclusion that, as it is harmless, as the evidence in favor of its activity is positive, if slight, and as the burden of proof seems to rest upon those who deny any action in the stomach, it is wise to continue its administration. Second, the question of administering pancreatin. I have done a number of tests upon the duodenal contents in cases of achylia gastrica. In practically all of these it has been possible to demonstrate the action of trypsin and amylopsin in the duodenal contents. There is no achylia pancreatica and it is of course not possible that achylia pancreatica and achylia gastrica could coexist and the patient continue to live. Therefore, there does not seem to be any theoretical indication for the administration of pancreatin. There are two general methods of administering this drug: one in combination with some substance such as calcium or tannic acid, which will prevent its destruction by the hydrochloric acid in the stomach; the other, to enclose it in such a manner that the hydrochloric acid cannot act upon it in the stomach, such as in salol-coated pills or in glutoid capsules. Neither method is wholly satisfactory. It is possible in achylia gastrica, if it could be given at such a time before meals that the stomach would be empty and could then be washed into the intestinal canal, that it might reach the duodenum unchanged. I have not attempted this, for it seems to me likely that after this was done the pancreatin would not be where it was wanted during the period of intestinal digestion. On the other hand, in cases of sprue and achylia gastrica, Brown, as I have mentioned, has found it almost a specific, and it is possible that in such conditions it is of help, but in true achylia I do not think that its use is required.

The prognosis for cure is most unfavorable. Patients may have periods during which the hydrochloric acid reappears in the stomach contents, but in my experience this return has never been anything but temporary and in the forms of achylia for which no definite cause has been found it can be expected that they will remain without secretion of gastric juice throughout life. With persistence in the treatment, however, they achieve a degree of comfort which is practically that of normal health. The nutrition remains good, or if not good, improves. The associated symptoms are relieved or diminished and the duration of life does not seem to be shortened.

DISCUSSION

Dr. J. Quincy Thomas (Norristown): Anyone knowing Dr. Sailer, knows that this is one of his characteristic papers; that is, he has covered the subject well and has given us some new thoughts.

What do we mean by achylia gastrica? Patients in whom repeated test meals show total absence of free acid and low total acidity may be said to have achylia gastrica. The name achylia gastrica was first introduced into gastroenterologic nomenclature by Einhorn in 1892, who described several patients in whom both free hydrochloric acid and pepsin were absent, but in whom pathologic changes in the gastric mucosa were absent or at least of minor importance. In other words, Einhorn believed that he had described a new clinical entity, a primary or functional abnormality of the gastric secretion, and not a secondary organic atrophy of the gastric glands, secondary to chronic gastritis.

It is very important to determine, in diagnosing this condition, whether you are dealing with an organic condition or a functional condition, and this can only be determined by a careful physical and fluoroscopic examination of the patient, together with several gastric analyses.

This disease can only be diagnosed by means of the stomach tube. There is no one symptom I know of that is diagnostic of achylia gastrica. The same set of symptoms are very marked ofttimes in hyperchlorhydria. The old-time method of using the ordinary stomach tube was ineffective. The newer method, or fractional method, has helped us in making correct diagnoses of this condition. Children who have marked dyspeptic disturbances from birth may have this condition. Men doing child feeding should work this out.

Regarding diarrhea, I find it uncommon compared with the number of patients who have this condition. It is remarkable how the intestine will compensate for this condition. One often sees cases in which the food looks as if it had been soaked in water and not in gastric juice.

I do not believe the condition of the tongue is diagnostic of any secretory disturbance in the stomach. Patients with this disease are usually dyspeptic for a long time before coming to the doctor and have been dieted too much, so the tongue is oftentimes very much coated from taking soft milk foods. I have not observed in my experience any of the mental conditions of which Dr. Sailer speaks.

The treatment of these cases depends upon the cause. The functional cases do well sometimes on hydrochloric acid; other times the acid seems to aggravate their symptoms; then, the alkalies seem to be better combined with belladonna. Belladonna relieves the hypertonic condition when it exists. The atonic conditions require nux vomica in large doses to increase the general tone and stimulate the glands to activity. The ordinary pepsin preparations are usually very inefficient.

One must think of rest cures, sojourns in the mountains or by the sea; direct the attention less to the stomach and more to the general organism; individualize our patients, test their alimentary tolerances and intolerances and not confine our treatment too much to the stomach.

Disease of the biliary tracts and gall bladder usually interferes with the intermediate chloride metabolism, results in a deficiency of hydrochloric acid; so one may learn much about the biliary tracts as a cause of achylia, by studying the biliary secretions with the duodenal tube or by the Lyon method.

Dr. John A. Lichty (Pittsburgh): Dr. Sailer covered the subject very well, but there are just a few points that I should like to call attention to; and I should also like to ask a few questions.

With reference to the diagnosis, I feel that it cannot be made, except with the stomach tube. The Rehfuss tube, however, may show an apparent achylia when it is not present. It is a good servant, but a bad master. If it slips down a little too far and you get into the duodenum, you may get an alkaline secretion, and yet there may be a pretty good acidity of the stomach all the while. I know that Dr. Sailer has had this same experience, and I simply mention it because in several cases I have been deceived in this way.

Another point is that if the tube does not slip in far enough, and does not reach the pyloric end of the stomach, we are likely to get wrong results. Of course, these may be checked up. Before a diagnosis is made, the examination should be repeated. My plan is to do an Ewald with the ordinary tube and get evidence of achylia, and then check this up with the Rehfuss.

Another point which is important is the nervous phenomena. I have a patient with achylia gastrica who has been followed for twenty-five years. These patients are sometimes a little troublesome. They are nervous and hypochondriacal. The patient I speak of came from Austria at the time the refugees with Carl Schurz came. The father of the patient was a physician. He died, and she was thrown on her own resources. She developed symptoms of achylia at that time. I see her about once in two years. While she is doing very good work as a teacher, she preserves her achylia and is almost as nervous as she was twenty-five years ago.

I should like to ask whether Dr. Sailer has ever seen a case of pernicious anemia that did not have achylia gastrica.

Another point on which I should like information is whether Dr. Sailer finds achylia gastrica in the so-called leather-bottle stomach.

Dr. Thomas G. Simpson (Pittsburgh): I was much interested in Dr. Sailer's paper. I have had two cases of achylia gastrica under observation for a number of years. There is one point that I thought might have some bearing on the etiology of this condition: A good many years ago, in cases of typhoid fever it was not uncommon to have infection of the gall bladder, which gave rise to cholangitis and often to gallstones later in life. I have under my care a young man and a young woman who had typhoid fever some years ago. Both patients consulted me for achylia gastrica. I have tried them with and without the use of pepsin and hydrochloric acid. If they become tired of taking medicine and stop its use, the diarrhea starts up immediately. I should like to ask whether, in the cases that Dr. Sailer has observed, there was a history of typhoid in any number of them. I have felt that typhoid infection of the gall bladder might be responsible for the achylia.

Dr. Sailer (in closing): I can agree with nearly all that Dr. Thomas has said about achylia, particularly the variability of the tongue changes, although in some of the cases the lingual symptoms are the earliest of which the patient complains. I have not seen a case of real achylia benefited by bicarbonate of soda and belladonna. I had great hopes that pilocarpin would prove useful but it failed completely. I am very glad to have Dr. Lichty's confirmation of the presence in some cases of the nervous phenomena. This has also been noted by Einhorn.

In reply to Dr. Lichty's questions, I have never observed a case of typical pernicious anemia that failed to have achylia; and I have thought that the latter symptom might account for the tongue symptoms that sometimes occur in association with the anemia. In one case of leather-bottle stomach, or linitis plastica, achylia existed. The cause of the gastric linitis was carcinoma.

In reply to Dr. Simpson, none of my cases have given a history of typhoid. Perhaps it was unrecognized.

ECLAMPSIA; STUDIES IN ETIOLOGY*

J. STUART LAWRANCE, D.S.C., M.D.

PHILADELPHIA

There are clinical phenomena of the *symptom complex* known as eclampsia which appear to corroborate the view of those who, like Tweedy[1] and Vaughan,[2] have presented data indicating that eclampsia may be a general toxemia culminating in an anaphylactic reaction—the convulsion. In a tentative elaboration of this concept it appears to me that eclampsia originates as a mild toxemia characterized by definite symptoms and signs in a certain type of women, from which it proceeds to a severe form, which I call the severe stage, characterized by being secondary to the mild stage and by definite lesions, and that as a result of anaphylaxis it then proceeds to the stage of convulsion. A close scrutiny of the record of each case of eclampsia will frequently show that it has progressed through these three stages. The major part of the evidence for this theory lies in the field of serology, and has been presented by Vaughan and others, but there is evidence that can be gathered from a study of the clinical phenomena, and it is to that aspect that I limit this paper. To that end I would ask your permission to present an analysis of the material of St. Mary's Hospital, Philadelphia, consisting (1) of a series of 414 pregnancies studied week by week by one observer during the year 1920; (2) of 64 emergency cases for the same year; and (3) a series of 20 eclampsias occurring in the years 1916-19-20. In the clinic series of 414 for 1920 there were 79 of the mild stage of toxemia, 49 of the severe, and 2 that proceeded to the convulsive stage, one of whom died. The analysis is presented according to this classification:

A. MILD STAGE, 79 cases.

(1) *Mentality:* Sixty-two women of the 79 were of low intelligence, viz: 42 were stupid, 19 were slothful, 1 was a moron. The thyroid was small in 55 of the 79, was normal in 15, and was enlarged (not exophthalmic) in but 9. Forty-six of the 62 mentally low grades had small thyroids, 13 normal ones, while only 3 had large thyroids.

(2) *Acidosis* was present in 58 cases.

(3) *Tetany* appeared in 59 of the 79 cases; 15 times in 24 normal or enlarged thyroids, 44 times in 55 small thyroids. Tetany manifested itself by twitching in sleep in 42 cases, by cramps in the gastrocnemius muscles in 38 cases.

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It was present early, three-fourths reporting it prior to the sixth month.

(4) *Environment:* A majority were living very much crowded together, two or three families in a house, and were not properly fed. Forty-six were I-para, exceedingly youthful with no experience, 11 were II-para, 5 were III-para, 17 were multipara of 4 or above. Of the 62 of low intelligence 38 were I-para. Environment has played a large part in the increased incidence of toxemia this year. It is easy to understand the baneful influence that the crowding of several families into one house would have on such functions as defecation, bathing, fresh air, cooking and rest, for if hindrances of such a nature as these surround the weak purpose of a stupid or slothful woman, it is bound to result in constipation, and the other phenomena of this stage. Starvation has not been a factor in this series, but improper and poorly prepared food has been.

(5) *Hygiene:* Its relation both to the incidence and relief of this stage is close. Sixty-four of the 79 were taking no exercise, 49 were constipated, 58 were not bathing with regularity.

(6) *Amenability to correction* can be estimated either in relief of symptoms or by improvement in physiologic processes. Measured by the first standard 70 of the 79 were correctable; measured by the second, 50. In this group there were 4 that previously had been eclamptic, 50 had an amenable albuminuria, 4 had occasional casts, 9 an amenable glucosuria. Eighty-eight per cent of symptoms were amenable, 47 by milk diet, 64 by instituting regular exercise, and 49 by overcoming constipation, some requiring one, others all three measures, while all required alkali therapy.

B. SEVERE STAGE, 49 cases.

(1) *Mentality:* Thyroid was small in 36 cases, normal in 13 cases, and in no case enlarged. Thirty-five were of low intelligence, 19 were stupid, 8 slothful, 3 morons, and 5 were deficient in other ways. Twenty-eight of these low grades had small thyroids, 7 had normal, and none had enlarged thyroids.

(2) *Acidosis* was present in 38 cases; obstinate in 3%.

(3) *Tetany* appeared in 36 of the 49 cases, 9 times in 13 normal thyroids, 27 times in 36 small thyroids. Manifested by twitching in sleep in 22 cases, and by cramps in gastrocnemius muscles in 25 cases.

(4) *Environment* was the same in this group as in those of the mild stage, but its influence was more pronounced, for a greater proportion had been physically crippled in the past and a greater proportion were of low grade mentally. Thirty-one were I-para, 5 were II-para, 4 were III-para, and 9 were IV or over, one being XI, one XII-para.

(5) *Hygiene:* The incidence of poor hygiene is greater in this stage. Forty were not taking any exercise and 33 were constipated.

(6) *Amenability to Correction:* Correction was more difficult to obtain in this stage than in the mild, for although the variety and incidence of symptoms were about the same, they were more severe, and renal, hepatic and hematogenous lesions, the result of the morbid process in the mild stage, had now to be dealt with. It should be noted that 41 of the 49 cases exhibited casts regularly after they entered this stage. Twenty-nine cases started in the mild stage and gradually passed into the severe, while the remaining 20 gave historical evidence of having been first in the mild stage. Although our figures show that a large number were relieved or escaped the convulsive stage, yet they do not show the difficulty of obtaining this result. I lay stress on this to show the close relation between the stages and the latent progressive seriousness of a toxemia that starts in a low grade intelligence, with simply constipation, tetany or acidosis as a symptom. It is noted that of the 49 cases 40 were symptomatically relieved, while 2 passed on to the convulsive stage, one dying. Improvement in physiologic functions was noted in 15; 3 of the 49 had had eclampsia. Eighty-one per cent of symptoms of this stage, compared with 88% of the mild stage, were correctible, viz: 40 by milk diet, 40 by regular exercise, 33 by relieving constipation, and 12 by hospitalization, one or all being required.

(7) *Transition from mild to severe stages:* Nine cases were originally in the mild stage for a long period and were closely observed for several weeks in the first stage. Twenty cases were in the mild stage for a short time after coming under observation. Two went through all three stages under observation. Twenty-nine cases in all were found to have undergone transition under observation. Twenty cases were not under observation in their mild stages, but gave, according to history, evidence that they had previously been in the mild stage.

C. CONVULSIVE STAGE.

The material consists of 20 cases, 3 clinic cases, 17 emergency cases, covering the years 1916, 1919 and 1920. Four of these are not available for complete analysis, because it was impossible to get complete histories. Sixteen are available for complete comparative analysis. All of these 16 cases presented symptoms for variable periods previous to the onset of the convulsive stage; in none was the convulsion without warning symptoms. In some the mild and severe stages were of short duration, but in 14 they were at least one week. It will be noted that the variety and also the incidence of the symptoms complained of by these 16 cases, previous to convulsion, is strikingly similar to those exhibited by patients in the mild and severe stages.

(1) A comparative analysis of this for each stage is as follows:

Symptoms	*Convulsive Stage, 16*	*Severe Stage, 49*	*Mild Stage, 79*
	Per Cent	*Per Cent*	*Per Cent*
Constipation	75	67⅓	62
Headache	50	55	63
Edema	43½	40	46
Cramps in gastrocnemii	43½	51	48
Tetany; other manifestations	31	44	53
Dimness of vision	25	14⅓	2
Optic pain	6	6	2
Epigastric pain	18¾	2	1 1/5
Sleeplessness	12½	36 7/10	43
Vertigo	12½	6	6⅓
Poor appetite	6	10 1/5	20
Vomiting	12	24½	12½
Diarrhea	6	0	0
Jaundice	6	0	0

Mental Status Previous to Admission	*Convulsive Stage*	*Severe Stage*	*Mild Stage*
	Per Cent	*Per Cent*	*Per Cent*
Stupid	50⅛	55	53
Moron	18¾	6	1⅔

	Convulsive Stage	*Severe Stage*	*Mild Stage*
	Per Cent	*Per Cent*	*Per Cent*
Small	75	73	69
Normal	18	26½	19
Large	6	0	11½
Urine			
Reaction acid	75	77	73
Albumin	100	73	69 7/10
Casts	100	83⅔	5
Diacetic acid	6¼	0	0
Previous Diseases			
Respiratory	25	38	49
Cardiac	12½	10 1/5	17
Anemia	25	4	5
Intestinal	12½	14	8 4/5
Infectious	12½	18 3/10	6 3/10
Renal	18 7/10	6	5
Eclampsia	0	6 1/7	5
Placentitis	25	21	16
Deaths in myocarditis and acute dilation	6¼		
Edema of lungs	18 7/10		
Acute dilation of stomach	6		
Asphyx. convulsion	18 7/10		

(2) The analysis indicates that the eclamptics belonged to the physical and mental types commonly found in the mild and severe stages and that they exhibited symptoms previous to the convulsion that were similar in variety and incidence to those of the mild and severe stages. The next step would be to discover, if possible, to what degree, if any, there was a decline in the activity of the maternal antibodies or hemolysins, that manifested itself clinically. The evidence of serology as to this aspect is much more convincing and easier to obtain and we have pending much data of this sort, but it is not possible to present it within the time set. Clinical evidence of a decrease in antibody activity may be found in 3 classes of phenomena, viz:

(a) Increase in severity of a principal toxic symptom just previous to the convulsion. Such an increase was noted in 15 of the 16 cases and was so pronounced that frequently a patient would afterwards forget the other symptoms unless a most careful history was taken, gathering information from her relatives and friends. As instances of this we have noted in 10 cases the sudden excruciating severity of an already existing headache and other symptoms, the climax being twenty-four to a few hours before the convulsion; the change of a previous dimness of vision to temporary blindness in 2 cases; a marked increase in an already existing edema, a sudden rise (2 cases) in the NH_3 coefficient or fall (2 cases) in an already low total urea, indicating that the body was becoming less and less able to cope with the toxemia because its resistance, i. e., antibody activity was growing less and less.

(b) The recurrence of convulsions after an interval of freedom if milk was given within 24 hours of the convulsions. Tweedy[3] was the first to note this phenomena and has lately interpreted it as indicating that the antibody activity is so low in the first hours of convalescence that the administration of even peptonized milk will overcome the resistance and allow the sensitized body again to react to the chorionic elements by anaphylactic convulsion. I have observed this relation so frequently, that I am convinced it is valid.

(c) The damaged condition of liver, kidneys and lungs impairs the force of existing antibodies and decreases their number or amount. The incidence of persistent casts in the severe and convulsive stages and of hepatic and renal lesions postmortem, indicates that antibody activity is decreased, while the recent work of Titus[4] on liver function is brilliant proof of a progressive inefficiency of this organ.

(3) This period of progressive decrease in the activity of the maternal antibodies is followed by a short period in which the body is swamped with uncombated protein poisons—

chorion—the constant presence of which in normal pregnancy has been proven by Schmorl[5] and others. Then comes the sharp anaphylactic reaction manifested by acute cerebral and pulmonary edema and the convulsion.

(4) It may be proposed tentatively that the clinical evidence that the convulsion is an anaphylactic reaction, is as follows: (a) Favorable influence on the convulsions of attempts at raising antibody activity, for instance, by colonic irrigation, lavage or morphia. (b) Favorable influence on convulsions of attempts at decreasing the amount of protein poison (chorionic) discharged into the maternal circulation. (c) Unfavorable influence on the convulsions of lowering antibody activity.

(a) The effect of raising antibody activity may be judged by the results of colonic irrigation of 20-40 quarts of water which raises the activity index of antibodies by clearing the intestinal tract of toxic matter, leaving the depleted system a freer hand to combat protein poison, by lavage which acts in the same manner, or by morphia, which inhibits metabolism. Colonic irrigation has had a favorable effect on convulsions in 12 of our 20 cases.

(b) The effect of decreasing the amount of protein poison may be judged by results of extremely early delivery, of relief of pulmonary and cerebral edema, of phlebotomy, and of death of the fetus. The effect of these methods is well known; they achieve their good results by decreasing or stopping the flow of protein poison—chorionic—into the maternal circulation, thereby causing a relative increase in antibody activity. They fail when they are instituted so late in the progress of a case that the antibodies cannot attain even then a relative superiority. Extremely early delivery means that the uterus must be emptied within one hour of the first convulsion. Operation within this very narrow limit has brilliant effect. De Lee reports that Freund[6] has operated within one hour of the first convulsion in 550 cases, with no deaths. Park reports some cases of this nature at this session. Results of operation undertaken after one hour is not pertinent to my subject. Relief of pulmonary and cerebral edema: that the first condition seems to become acute just before each convulsion was first pointed out by Tweedy[7] in 1908, who has obtained striking results in lowering the frequency of convulsions by relieving it. Snyder,[8] Wilson,[9] Park and Zangmeister[10] have reported favorable influence of lumbar puncture. For phlebotomy as the single therapeutic measure, Winter[11] reports 10% mortality. All observers are cognizant of the favorable influence on the convulsions of death of the fetus.

(c) Unfavorable influence on convulsion of lowering antibody activity may be judged by the results of: early administration of food, already commented on, also Matthews[12] experiments on meat feeding of Erck fistula dogs; cerebral stimulation, noise, light and neglect; failure to manage pulmonary edema at the rotunda, raising mortality from 8 to 11%; anesthesia, to which part of the relatively poor results of late operation can be attributed; extraordinarily rapid swamping of the system with chorionic elements, as is seen in very acute cases in which there is a preëxisting lesion of the kidney or liver. In one of my cases, in which the whole process of the convulsive stage lasted about 2 hours or less, there was miliary tbc. of the liver, and in another a severe chronic nephritis of several years' duration.

SUMMARY

The sequence of events may be summarized as follows:

A *Mild Stage:*

1. Mental deficiency.
2. Unhygienic living.
3. Symptoms: Constipation, etc.
4. Acidosis.
5. Decrease in antithrombin, increase in fibrinogen.

B *Severe Stage commences:*

6. Appearance of renal and hepatic lesions.
7. Breakdown in antibody and ferment protections.

C *Convulsive Stage commences:*

8. Placental elements swamp the system.
9. Pulmonary and cerebral edema acute.
10. Anaphylaxis.
11. Convulsion.

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WHAT CASES OF ECLAMPSIA SHALL WE SECTION?*

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It is assumed in a discussion of this malady that some method of delivery is indicated when so tragic a circumstance as eclampsia arises, for the reason that the pregnancy is the cause of the condition. It matters not what particular cells are concerned in the elaboration of the poison, or what rôle the distant endocrines play in the process, until we can recognize and control these, we must depend upon uprooting the whole vicious process by the radical procedure of terminating the pregnancy. This is in harmony with our treatment of other grave disorders, as for instance herniæ, perforations and appendicitis. Those who treat the convulsions and let the pregnancy take care of itself, can use no remedies that are not equally available to the one who first removes the cause and then applies the remedies.

On this assumption the question then presents itself: How shall we empty the uterus? The answer to this query will be determined by the individual circumstances of the case as well as by the experience of the physician in charge.

Artificial methods of delivery are accomplished by the natural birth passage or by adbominal section. The usual method of inducing labor is too slow to apply to this condition, and some method of quick delivery must be resorted to. These are practically limited to three, namely: (1) Dilatation of the cervix and application of the forceps or podalic version. (2) The vaginal cesarean operation. (3) The abdominal cesarean operation.

Convulsions are notably prone to occur in patients in their first pregnancy, and in any event before the time for normal delivery; so that we are confronted with the problem of delivering a patient with an undilated birth canal, whether primipara or multipara.

If the patient be a multipara with the history of a previous normal delivery, at or near term, with the cervix well effaced, with or without dilatation, one would probably elect to do a speedy dilatation followed by version or forceps delivery. If, on the other hand, the convulsion occurred before cervical effacement, or in a primipara before labor had set in, the difficulties of effecting delivery by the natural passages are so great, and the danger of injury and infection so certain, that one would hesitate to undertake it. It is in just this class of patients where the cutting operation is indicated; the vaginal cesarean at or before the seventh month of pregnancy in multipara, and after this period the abdominal cesarean section.

The abdominal section has certain advantages over forced delivery by the natural passages. Among these are the speed with which the delivery may be accomplished, thus curtailing the period of anesthesia if other than local or spinal anesthesia be employed; the avoidance of infection by a clean cut through a properly prepared field, where hemorrhage, if it occurs, can be managed with surgical precision; and last, but not least, the extraction of the infant without doing violence to it. These are to be set over against the more or less traumatic divulsion of the undilated birth canal, which can scarcely be conducted with the same aseptic detail as with the abdominal incision, and where injury involving the cellular tissue of the vault of the vagina cannot be satisfactorily repaired. In any event the injuries require another or more likely a subsequent operation. Incidentally, section gives to the unborn child its maximum chance of survival, in that it is quickly brought into the world without trauma.

The fetus participates in the toxemia of the mother, and thus its frail tenure on life is handicapped from the outset. However, if it is rescued from its toxic environment at or near its forty weeks' residence, and before the toxic condition of the mother has become too intense, its chance of living is greatly increased. Thus it happens that both the mother's and her child's interest are conserved by the same procedure, namely, the earliest possible delivery after a convulsion has occurred.

Although a large percentage of eclamptics survive many seizures, proof can be adduced to show that the greater the number of convulsions, and the longer the time from their onset, the greater the mortality. Hence the operation, whatever its nature, should be undertaken at the earliest possible moment after the first convulsion with the view of cutting out the cause at its source.

Radicalism may indeed prove to be the conservative treatment in advancing toxemia, even before convulsions have occurred. A happy instance of this is believed to be illustrated in the case of Mrs. C. (Case XXXIV), who was admitted to the Kensington Hospital for Women in the thirty-sixth week of gestation, in a toxic condition which was growing steadily worse, even under the painstaking care of a capable physician. She presented a family history of unusual interest, the high points of which are as follows:

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> Her mother who had had several attacks of tetany, was pregnant three times and had eclampsia twice. One aunt (mother's sister) died of eclampsia at twenty-one. Another aunt (mother's sister) was married but had no children and never menstruated, thus showing a reproductive deficiency. A mother's cousin died of eclampsia at nineteen. Another sister of the mother, resembling the father's side, had four normal deliveries but her daughter had eclampsia with the first child. The mother's brother has a daughter who has not menstruated at eighteen, thus showing deficiency in her internal secretions. There is much severe kidney disease in the fifth and sixth decade of various members of the family. Such is the remarkable history of this family. The patient herself, a primipara aged twenty-seven, was never robust but felt quite well in the early months of pregnancy, when her urine was normal and her blood pressure 104-60. At about the thirty-second week of gestation symptoms of toxemia began to manifest themselves and, although fluctuating under treatment, grew progressively worse until operation at the end of the thirty-sixth week of gestation, when the blood pressure was 190-110. There was marked edema, and the urine, although plentiful, was loaded with albumin and filled with hyaline and granular casts. Her operation resulted in a living baby and an uneventful recovery. Both were discharged in good condition on the seventeenth day.

Such history, followed by good results, justifies, I believe, the radical interference. And this leads to the consideration of the method of interference. This patient was a primipara not in labor, was indeed four weeks from term, and had developed no convulsions; hence labor might have been induced by the usual method of introducing a bougie or bag into the uterus, trusting that labor would come on in due course. This however does not always happen; but once having started one cannot retreat, but must go on, introducing more bougies, and perhaps in the end resorting to *accouchement forcé* with all its attendant disadvantages of trauma and infection, to say nothing of the time required, with every hour perhaps a golden one. Section under such conditions is, in my judgment, far preferable.

There are, however, limitations to the employment of the abdominal route of delivery which must be adhered to if the method is not to be brought into disrepute. Chief among these are patients with infected birth canals from repeated examinations over a long period, especially if the bag of waters is broken. Such conditions impair but do not forbid the risk of operation. If futile efforts at delivery have been made section should not be undertaken. The operation itself under proper conditions should not entail more risk than a clean section for any other cause. The operative danger arises from unclean cases and delay in operation, plus the serious illness of the patient. This unavoidable factor would, of course, have to be reckoned with in any method of delivery. This operation, however simple though it be, is not to be undertaken by one untrained in antiseptic technique and abdominal surgery, or with other than hospital facilities or their equivalent; for there is no doubt that under a careless technique, there is more risk in invading the abdominal cavity than in operating through the vaginal canal.

Appended is the report of fifteen cases of eclampsia or toxemia delivered by abdominal section. This supplements the record of twenty-one cases previously reported in the *American Journal of Obstetrics and Diseases of Women and Children*, Vol. lxxvii, No. 6, 1918.

It is worthy of note that only five of these patients had postpartum convulsions, and that in all the other convulsion cases the convulsions ceased abruptly after the operation. Three mothers and six babies of this series died. Four babies, including a pair of twins, were still-born. This shows a maternal mortality of 8.3%. One of these deaths (Case IX, previously reported) was not truly an eclamptic but a cardiorenal case in the last stage of broken compensation in which the terminal event was a convulsion; and hence from the statistical standpoint should not have been included in this list. These cases were for the most part not seen promptly after the first convulsion, when one may expect the best results from radical treatment, but had to be dealt with when they were brought to the hospital, comotose and after many convulsions. In each case where death resulted it was where prompt radical treatment had not been given.

CONCLUSIONS

Pregnancy should be terminated as soon as a convulsion has occurred, and where the toxemia, while under the most approved treatment, grows progressively worse until it reaches the danger point. This is in the interest of both mother and child.

Delivery by abdominal section is indicated in primipara where labor has not set in, or is not well advanced; and in multipara not in labor, with rigid cervices.

The operation is contra-indicated if unsuccessful efforts at delivery have been made, and its field of safety much curtailed if there have been frequent vaginal examinations over a long period, especially if the membranes have been ruptured.

The operation should not be undertaken by one unskilled in surgical technique, nor without the proper facilities.

Case XXII.—Mrs. L., Polish, with history details not available, was admitted to the Kensington Hospital for Women, January 11, 1917. Sick with convulsions from 3 a. m. to 11 a. m., when she was delivered by section. Mother and baby made a good convalescence, and this mother has since born two children in the normal way.

Case XXIII.—Mrs. P., Polish, with history details not available, was admitted to the Kensington Hospital for Women, March 26, 1917, with convulsions. Section resulted in a living baby and good convalescence of the mother, who has since given birth to one baby in the normal way.

Case XXIV.—Mrs. E. C., primipara, aet. 22, pregnant eight months, was admitted to the Kensington Hospital for Women, December 1, 1918, unconscious from repeated convulsions. Section resulted in a six-pound three-ounce baby and a slightly febrile convalescence of the mother, who had three or four postpartum convulsions. Mother and baby were discharged in good condition on the fourteenth day.

Case XXV.—Mrs. R. L., primipara, aet. 20, was admitted to the Kensington Hospital for Women, December 2, 1918. She was found unconscious, having fallen out of bed at home. Five convulsions occurred before admission to the hospital and two after, before cesarean operation was done under local anesthesia. A still-born baby was delivered. The mother made an afebrile convalescence.

Case XXVI.—Mrs. S. fell into convulsions at 5:25, and six occurred before cesarean operation at 7:40, at which a still-born baby was delivered. This patient died after twenty-two hours, without further convulsions, but with complete suppression of urine.

Case XXVII.—Mrs. D., aet. 21, primipara, was admitted to the Kensington Hospital for Women, November 14, 1919, and brought to the operating table after eleven convulsions had occurred. Section under local anesthesia resulted in the birth of twins, the first still-born and weighing four pounds, eight ounces. The second weighed five pounds, two ounces, and lived half-an-hour. The patient made a febrile convalescence and was discharged on the fifty-second day.

Case XXVIII.—Mrs. M., primipara, aet. 29, pregnant about thirty-eight weeks, was admitted to the Kensington Hospital for Women, September 18, 1920, unconscious but not in labor, after three convulsions at hourly intervals. Operation one-half-hour after admission resulted in the birth of a baby girl weighing five pounds and seven ounces. The baby died of convulsions thirty hours after birth. The mother had an afebrile convalescence and was discharged in good condition on the thirteenth day.

Case XXIX.—Mrs. C., primipara, aet. 20, was admitted to the Kensington Hospital for Women, October 13, 1920, in an unconscious condition, with a history of having had several convulsions during the past three days. She was about thirty-five weeks pregnant and not in labor. Section resulted in a four-pound, fourteen-ounce baby, and was followed by an afebrile convalescence. Mother and baby were discharged in good condition on the thirteenth day after operation.

Case XXX.—Mrs. O., primipara, aet. 23, was admitted to the Kensington Hospital for Women, October 13, 1920, in a comotose condition, with a history of several convulsions before admission and frequently recurring convulsions after admission before being brought to the operating table. She was about thirty-four weeks pregnant and not in labor. Convalescence was slightly febrile. Mother and baby left the hospital in good condition on the thirteenth day.

Case XXXI.—Mrs. K. P., primipara, aet. 21, was admitted to the Kensington Hospital for Women, April 9, 1921, for symptoms of threatened eclampsia. She was given routine treatment for five days, when she developed a convulsion, and was promptly operated upon under local anesthesia. She was delivered of a baby girl weighing six pounds, eleven ounces. Spinal puncture was one of the measures resorted to for the treatment of the convulsions. Her convalescence was complicated by a febrile reaction and meningismus. Mother and baby were discharged in good condition on the thirty-fourth day.

Case XXXII.—Mrs. P., admitted to my service of the Kensington Hospital for Women at 8:45 p. m., May 25, 1921, with the history of two convulsions early in the morning, in one of which she fell out of bed. She was brought to the hospital from a near-by town in New Jersey in a stuporous condition. No more convulsions occurred until next morning at eight-thirty, when it was observed that she had slight paralysis of the face, left eyelid, left arm and left leg. Section was done at 9:30 by the resident physician, under gas and oxygen anesthesia. A baby girl, weighing five pounds, ten ounces, was delivered, this being about the thirty-fifth week of gestation. On the day following operation paralysis on the left side was complete. Edema on the right side cleared up more promptly than on the paralyzed side. She was discharged from the hospital twenty-nine days after admission, able to walk and use her arm, but the facial paralysis was still present and slowly improving. She made an afebrile recovery and the premature baby did perfectly well. Paralysis was not noted until twenty-four hours after the first convulsion and there was no convulsion subsequent to operation.

Case XXXIII.—Mrs. F., primipara, aet. 29, was admitted to St. Mary's Hospital, May 20, 1921, after having two convulsions and prepared at once for cesarean section, the patient being in about the thirty-sixth week of gestation and not in labor. She had suffered from blurred vision, headache and scanty urine, and had been treated for nephritis by her physician for a month or more. A four-pound, one-ounce baby was delivered, which lived only three days. The mother made a good convalescence, barring febrile temperature for four days.

Case XXXIV.—Mrs. C., primipara, aet. 27, was admitted to the Kensington Hospital for Women, June 30, 1921, in a toxic condition, about the thirty-sixth week of gestation and not in labor. She was operated on because of symptoms of toxicity, namely, edema, dizziness, increasing blood pressure (190-110) and albuminous urine loaded with hyaline and granular casts, this condition arising while under the care of a painstaking physician. This patient gives a family history of unusual interest. Mrs. C's mother was pregnant three times. She suffered with edema, headache, fainting spells and vomiting in the first pregnancy. With the second she had eclampsia and premature delivery at the seventh month. With the third she went to term but suffered from eclampsia and was unconscious two days. She has had several attacks of acute tetany. Mrs. C's mother's sister died of eclampsia at twenty years. Another sister of Mrs. C's mother was married but had no children and never menstruated, thus showing a deficiency in her reproductive glands. Mrs. C's mother's cousin died of eclampsia at nineteen years. Another sister of Mrs.

C's mother, resembling the father's side, had four normal deliveries, but her daughter had eclampsia with the first child, and a normal delivery nine years later. Mrs. C's mother's brother had a daughter of eighteen who had never menstruated, thus showing deficiency in the reproductive glands. There is much serious kidney disease in the fifth and sixth decades of various members of the family. Her operation resulted in a living baby and an afebrile recovery, although she never was a robust person. She and the baby were discharged in good condition on the seventeenth day.

Case XXXV.—Mrs. S., primipara, aet. 19, was admitted to the Kensington Hospital for Women, July 1, 1921, after having nine convulsions. Section promptly done was followed by four postpartum convulsions. The patient made a slightly febrile convalescence and both mother and baby were discharged well on the eighteenth day.

Case XXXVI.—Mrs. G., primipara, aet. 35, was admitted to the Kensington Hospital for Women, July 24, 1921, after having one convulsion at home and three more before she could be brought to the operating table. She was discharged on the eighteenth day after a febrile convalescence, both mother and child doing well.

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DISCUSSION

ON PAPERS OF DRS. LAWRANCE AND PARKE

Dr. Paul Titus (Pittsburgh): These papers have been an excellent symposium on the entire subject of etiology and treatment of eclampsia.

Dr. Lawrance has gone into the review of eclampsia with painstaking thoroughness. I am sorry, however, to have to disagree with him in two or three respects because I have great regard for his opinion, but it would be rather unlikely for us to entirely agree on a subject about which there is still so much doubt and speculation. He seems to favor the anaphylactic theory of eclampsia, but I believe that this idea, which at first seemed to promise so much, has been pretty well disproved. A tremendous amount of experimental work has been done along this line and recently Obata has shown that the extract of normal placenta is as toxic as that of an eclamptic placenta, while Zweifel claims that there is no basis for the theory that eclampsia is the result of a hypersensitiveness on the part of the mother for fetal or placental proteins, since he has been unable to sensitize animals for hemologous fetal or placental proteins.

I think that a simpler explanation lies closer at hand, and have been very much interested in the theory of glycogen depletion of the liver as an activating cause of toxemia. Granting that specific toxins may originate in the fetus, it still holds good that they are harmless unless the liver has been so depleted of glycogen that it cannot properly combat them.

Dr. Lawrance said that starvation has no influence on these patients but at the same time practically all of them were shown to have had an improperly balanced diet, which is an indirect starvation. Furthermore it has been shown experimentally that the fetus requires enormous quantities of glycogen from the mother and this is a relative starvation. The liver is the gylcogen storing organ of the body and must be well stored in order to function properly as the detoxicating organ of the body, as proved by the experiment that a much smaller dose of any poison is required to kill a starved animal than one well fed on carbohydrates.

The nephritis of eclampsia may be merely incidental, as it is in instances of toxemia from other causes, such as pneumonia, scarlet fever, or bichloride of mercury poisoning.

Liver lesions are always present in fatal eclampsias but in connection with the intravenous administration of glucose solution for eclampsia, as we have been using it at the Western Pennsylvania Hospital in Pittsburgh, we have made some interesting observations. It has been possible to reduce our mortality from 29 per cent to 15 per cent by this measure alone, and in those patients who died, the liver has been restored so far toward normal that it would be difficult, if not impossible, for a pathologist to say that the patient had had eclampsia. At the worst there was little more than cloudy swelling of the cells, and the sections were quite unlike those usually seen in eclampsia. In connection with the intravenous use of glucose solution, we are trying to develop, through glycemia curves, a test of the liver's ability to store sugar, and I believe this may be of some prognostic importance. I realize that other men have reported better figures than ours, but the reliability of a report of 550 cases of eclampsia operated upon without a death seems decidedly open to question.

In all this, I am not trying so much to disagree with the anaphylactic theory as to find a simpler physiologic basis for certain facts which we know, such as the liver involvement in this problem.

Dr. Lawrance brought out an important point in speaking of the fact that all of these patients showed premonitory symptoms. The practical significance of this is only too apparent.

So far as mentality is concerned, only a person who is lacking in brains would be a glutton and at the same time let her bowels become locked for days. Many of these patients, however, seem to be indifferent about themselves when they become toxic. They delay about reporting symptoms and seem not to care. I wonder which is cause and which is effect.

The predominance of small thyroids is another interesting point which Dr. Lawrance emphasized. I believe it was at last year's meeting of the State Society that one man said he felt sure when he saw a woman with a large thyroid that she would not develop toxemia.

Dr. Parke's paper covers the whole subject of interference admirably. It is rather hard to generalize about what treatment shall be followed out on these patients, but certainly, if there is to be a choice between dilatation of the cervix and abdominal cesarean section, the latter is by far to be preferred. The only question which might come up is whether or not this particular patient is a proper one for cesarean section, or for any immediate interference. I rather incline to Tweedy's opinion, that the pregnancy itself can be let alone for the time being, at least until the patient's immediate state can be improved by other measures. Unlike Dr. Parke, I have not noted any particular difference in mortality as dependent upon the length of time the patient has been eclamptic or the number of convulsions, she has had. The relationship is, however, not at all unlikely.

Dr. Collin Foulkrod (Philadelphia): Not in antagonism to anything that has been said, but in the spirit of investigation and in order that I might find out myself whether I am right or wrong, I want to discuss these papers and to ask: Why do we have eclampsia? I hope some day to present a paper demonstrating that eclampsia is a preventable disease and to give statistics from a clinic where we do not see eclampsia. If there were a white light outside that door, and one door were blue and one door red, and you were to stand in the middle of the room, you would see a red reflection on that side and a blue on the other side of the room. If you were a mathematician you could figure out from the angle where the light was. If a clinic could demonstrate to you that by certain dietary adjustments eclampsia could be eliminated from that clinic, would you believe that it was possible that there was a light out there and that there was a cause for eclampsia but *seen through different colored glasses?* The point that stands out I think is that Dr. Lawrance is right and Dr. Titus is right. Dr. Titus agrees with the theory working in the minds of a great many other men in the discussion.

Let us illustrate again. We find J. G. Brill making cars and making them well, and along comes a war and the government asks J. G. Brill to make shells. J. G. Brill cannot make cars as well when making shells as when making cars alone. Everybody seems to agree that the liver is the focal point in eclampsia because autopsies show it. The liver is taking care of some food digestion. Dr. Titus has made a specific and very accurate statement regarding the liver. Along comes war (pregnancy) and the liver says "Let go of food and give up cells for pregnancy." The patient therefore cannot digest as much food during pregnancy. At the American Gynecological Society, metabolic studies were presented to demonstrate the necessities of diet of pregnant women. This is just the beginning study of the dietary necessities of the pregnant woman. If, then, you confine the women to this necessary diet you will not have eclampsia, because you are then setting aside a lot of other material for the making of a baby.

Why do you have eclampsia in a woman when you do not expect it? Every single pregnant woman is a potential eclamptic. Sit down and tell her she is potential. Say, "if you overeat you are going to start out in three or four months to irritate your liver. At seven months it will be worse." What do the laboratories tell us of the amount of diet that is necessary to keep a woman going while making a baby? Give her this and nothing more. If we start early enough we will not have eclampsia. I have experimented for fifteen years and adjusted diet on a purely mechanical basis and I am finding it is possible to keep patients from having convulsions, which is apparently the diagnosis of eclampsia; although we see them having crises which are not eclamptic convulsions. You must think of the possibility that the liver is overloaded in some quarter.

The second point is the question of section for eclampsia. I think Dr. Parke presented a good résumé. I cannot quite agree that the woman who stands before me is an equal risk for abdominal section with any clean section. I want some one to present large statistics of section in eclampsia. Sometimes the results are good, sometimes not. There are many more possibilities of accident in eclampsia than in an appendix operation, e. g., in the lung, liver and digestive organs, and yet there are many primiparæ who need section in eclampsia.

Dr. J. O. Arnold (Philadelphia): I am very glad of this opportunity to add a word of testimony and experience in endorsement of the last speaker on this subject of the prevention of the toxemia of pregnancy. If there is anything that has particularly impressed me after years of observation along this line, it is the fact of the very important part played by diet and the manner of eating, as a determining factor in both the early and late toxemias of pregnancy, but especially in the so-called preëclamptic toxemia. While we have worked and debated over the question of the *origin* of this toxemia for many years without making much headway, and while the professional world is still greatly divided as to the value of the different methods of treatment for eclampsia, it seems to me that the one thing we need more than anything else right now, is to emphasize the very great value of definite, practical instructions on *how to live—how and when and what to eat*—as the most effective preventive measure at our command.

The majority of pregnant women are seen first by the family physician, and it is he who is most in need of a definite course to follow. The obstetric specialist is the one to whom he naturally turns for guidance and instruction, and too often I fear we have only vague, general advice to give him, when he wants a definite plan which he may follow with a fair assurance of success. This was brought to my attention a few days ago, when a physician called up for advice on the treatment of a case of pernicious vomiting, adding that he had no doubt I had many such cases. When I replied that he was mistaken, and that I seldom saw a troublesome case of toxemia in my own practice, he expressed a desire to know "my secret," as he called it—how I prevented it. He had tried all kinds of remedies without much success. "Tell me something definite; the books don't help much."

Now I venture to suggest a very practical little scheme for feeding patients which I have followed for several years with quite satisfactory results. I insist that they all follow this plan, whether I see them early or late, but of course the earlier the better. I insist on the taking of food every three hours, five times a day, then I know there will be no overeating. I usually put it something like this: Divide the whole quantity of food for the twenty-four hours into five equal portions, one of which is to be taken every three hours. No eating at any other time and no "big meal." A definitely named variety of foods is given, with a preponderance of carbohydrates and a minimum of proteids. No woman can overeat who honestly follows the course I outline for her, and no woman can suffer for want of food who thus eats at three-hour intervals. As a part of each meal, or every three hours, all patients get a liberal dose of bicarbonate of soda, which is gradually increased until the urine shows a slight alkalinity. Here is something definite, and simple enough for all to understand and follow, and something which if clearly understood and followed, will undoubtedly do a great deal to prevent toxemia. While no one, of course, would attempt to maintain that the primary source of the toxemia of pregnancy is in the gastro-intestinal tract, it *does* appear perfectly clear, it seems to me, that in a very large percentage of cases the digestive tract holds the balance of power, so to speak, in the struggle which is ever present in the pregnant woman between these specific toxins, whatever they are, and the protective elements of her blood. A patient barely capable of remaining well by holding down her pregnancy toxins, for instance, may soon lose out when these toxins are reinforced by large doses of poisons from the intestinal tract, and it has been my experience that we can come nearer to keeping the intestinal canal clean and free from the poisons of undigested foods by this simple plan of eating, than by any other means.

Dr. Charles Mazer (Philadelphia): I would speak of a very simple method of inducing labor in preeclamptic cases at or near term. Probably because of its extreme simplicity, it is rarely spoken of. I am referring to the castor oil-quinine-pituitrin method of induction of labor.

The proper administration of the above mentioned drugs in the experience of my chief, Dr. J. C. Hirst, will induce labor in six out of ten cases at term or near term. The records of the St. Agnes Hospital will show this to be correct. My personal experience with this method is similar.

Only three weeks ago, I sent a woman to the St. Agnes Hospital with preëclamptic symptoms: headache, high blood pressure and albuminuria. She was given three ounces of castor oil, 15 grains of quinine at the first sign of bowel action, followed by pituitin, m. three, every hour until three doses were given. She promptly fell in labor and left the hospital in two weeks a well woman. In cases of postmaturity, this works equally well.

Dr. Theodore B. Appel (Lancaster): I want to say a word emphasizing the trend of the paper and agreeing with Dr. Parke. I want to go a little further and bring out the point that when the patient is a toxic woman with convulsions, a condition of full-fledged eclampsia, abdominal section should be rather the first than the last resort of the case. If we can bring before the general profession the idea that these cases are of a serious nature, requiring hospital attention; that indiscriminate efforts to bring on labor without fuller knowledge of the severity of the toxemia can only increase the danger; that the danger of the section depends on the preliminary interference rather than the operation itself, I think we shall have gained a great deal. I thoroughly agree with him, also, that the sooner the uterus is emptied after the development of convulsions the better results we are going to obtain.

As to the danger of the operation compared to other sections, I think it can be treated from the surgical standpoint. The operation itself is on a par with the ordinary surgical laparotomy, taking into consideration that you are operating on a toxic patient, so that it can be classed in that way. Aside from that the infection of the birth canal is the main feature. Now if we can get these cases early, before attempts to dilate the uterus, before indiscriminate examinations have brought in the element of infection to the birth canal, I believe that we will have very much better results when the cases have come to that stage. I also agree, when you have any hospital cases of progressive development which do not yield, that the sooner the uterus is emptied by the abdominal route in primiparæ with narrow vaginal outlet, the better results you are going to obtain.

Dr. Lida Stewart Cogill (Philadelphia): Those of us who are doing quite a good deal of prenatal work have found that in certain cases there has been a *simulated* convulsion at time of delivery, although the clinical symptoms of toxemia had been controlled by treatment, the blood pressure normal, the patients not toxic and urinalysis negative. It occurred in those prenatal cases where they had probably been over*cautioned* and *overimpressed* with the significance of their symptoms, and was purely a psychic occurrence.

Dr. Lawrance (in closing): In regard to the validity of the anaphylactic theory, of course all questions of this nature are more or less in a very theoretical state, yet I think there is so much evidence for each one of the theories, for the placental and for the toxemia theory and also for the so-called anaphylactic theory, that one can find sufficient data to justify holding that belief; but, of course, no one would maintain that such a theory contained all the truth.

Dr. Parke's mortality I think shows very nicely the importance of emptying the uterus at the very earliest moment, and also I believe he shows that emptying the uterus later than one hour after the first convulsion is of very little value, in other words, that late delivery is of very little value, but that early delivery is of considerable value.

In regard to the question of the 550 cases of R. Freund, brought up by Dr. Titus, it certainly does strike one as almost impossible for anyone to have that number of cases without a death, but I have the reference. De Lee reported it and I searched the Centralblatt für Gynakologie for 1912, so it seems to be a verified and truthful report, although it is a most marvelous record. If it is true, it demonstrates brilliantly the fact that very early operation eliminates bad results.

As to the incidence of mental deficiency, this record was not made on the mental status of the woman as she appeared to us in eclampsia, but was made up by a study of her school record and by her mental status throughout her life previous to her becoming pregnant, and it required quite a considerable amount of work. It does seem to be true that 50 per cent of women in the mild, severe, or eclamptic stages are of low grade mentality.

I also wish, in closing, to state how sorry I am that Dr. Thomas P. Cole is not able to be here to-day, because he has some very interesting cases of eclampsia to report, extending over a period of a great many years. He had 32 cases of eclampsia in about 1,500 deliveries, with a mortality of 6 per cent, and that due to the eliminative treatment of Rotunda Hospital.

Dr. Parke (in closing): I want to congratulate Dr. Lawrance on the fine histories he has taken of these patients and I hardly know how he could secure them. From many eclamptics I see we cannot get any histories, because the patients cannot speak the language. I supposed I would have to argue for the early induction of labor, for I thought he was following the plan of combating the toxemia and allowing the pregnancy to take care of itself, but I am very much pleased to find that he also thinks that early induction of labor ought to be secured.

XERODERMA PIGMENTOSUM;*

REPORT OF AN UNUSUAL CASE

W. H. GUY, M.D.

PITTSBURGH

Xeroderma pigmentosum was first described as a clinical entity by Kaposi in 1870, two cases being reported at that time. Since then cases have been reported at intervals from different parts of the world, so that well over two hundred and fifty cases are in the literature to date. Various names have been suggested for the condition: Gerber called it a peculiar form of nevus pigmentosus; Taylor considered it as angioma pigmentosum et atrophicum; Pick called it melanosis lenticularies progressiva; Neisser named the condition liodermia cum melanosi et telangiectasia; Crocker called it atrophoderma pigmentosum; Pifford applied the name lentigo maligna; Vidal spoke of it as dermatosis Kaposi; and many other names have been suggested at different times, but there seems to be no reason for these many names, because xeroderma pigmentosum is a descriptive term which briefly expresses as much as the more complicated names and has the additional claim for choice by virtue of historical priority.

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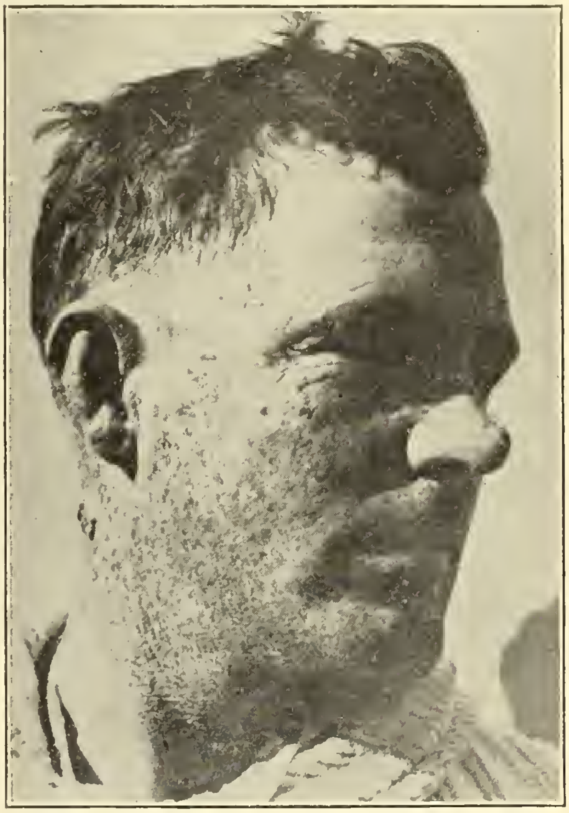
*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

The clinical picture of xeroderma pigmentosum is quite characteristic, and once seen is not likely to be forgotten. The disease usually begins in early life, most often during the latter part of the first year, and is slowly progressive throughout the life of the individual. Rarely a similar picture develops in adult years. The earliest evidence of the disorder has been variously reported as an eruption of freckles, ordinary sunburn, or erythematous macules on exposed parts of the body. Regardless of the presence or absence of marked inflammatory skin, there soon appears an extensive crop of freckles in the sites of predilection, these differing from freckles developing in normal skin from exposure to light. The pigmented spots are displaced by atrophic lesions of the same size, or small white atrophic spots may develop simultaneously with the freckles. Usually at about the same time there develop numbers of telangiectases. Thus, after the disease has been present for a few months, particularly on the face, but also on other parts of the body exposed to sunlight, one notes numerous freckles, interspersed with atrophic spots and telangiectatic vessels. As the patient grows older the atrophy becomes more marked, so that the skin has a tight drawn appearance. In marked cases of atrophy, ectropion often develops. Conjunctivitis with photophobia, keratitis, and even corneal opacities may be seen. The atrophy may be so marked that it may result in narrowing of the oral and nasal orifices. Soon after the appearance of atrophy, keratosic excrescences make their appearance. These may be irregularly distributed throughout the involved areas, or they may appear as isolated spots. They tend to undergo epitheliomatous degeneration, with the formation of extensive lesions of the rodent ulcer type or even the prickle cell variety. These patients nearly always die before puberty, the result of marasmus or malignant disease, notable exceptions however being recorded.

According to Kaposi the disease begins in the connective tissue of the papillæ and the endothelium of the capillaries. An infiltration is present early, soon followed by a new formation of capillaries and a pigmentary deposit in the deeper rete cells. Infiltration and degeneration of glandular structures follows, malignant changes finally being apparent.

But little is known of the cause of the condition, although consanguinity is considered as the most frequent predisposing cause. Toyama accounted for prevalence of the disease in Japan by intermarriage. Ormsby states that over 25% of all recorded cases occurred in Jewish families, and quotes Vignola-Lutati to the effect that the pigment is produced through an inflammatory reaction in predisposed skin, this predisposition being due to a pathological condition of the cells caused by blood relationship. It is a familal disease, but not hereditary. At best, we can but theorize to the effect that these patients have a congenital predisposition to the disease, actinic sun rays being the exciting cause. Actually the condition is a premature senility of the skin, the term not including a similar condition seen in adult life and known as sailor's skin.



Case of Xeroderma Pigmentosum

CASE REPORT

The case reported is that of a man thirty years of age. He stated that at an early age his parents learned that he sunburned easily and out of all proportion to the amount of exposure. He had always had a clear white skin on the covered parts of the body, but when very young developed extensive crops of freckles. During his short attendance at grade school he took precautions against exposure to sunlight by wearing a wide-brimmed straw hat and gloves. On the evening of a particularly bright sunny day he would feel nauseated and there would be considerable sunburn in spite of his protective measures. He quit school and attempted various occupations, both in and outdoor, but found that his skin became progressively worse. "Blisters, little white places and rough spots" began to appear, all but the freckles and white spots disappearing upon application of any ointment and complete avoidance of sunlight. He finally began working in a coal mine, entering the mine early in the morning and leaving after dark. He slept in a darkened room. From that time on he had much less trouble than before. He was drafted for the army and immediately developed an acute exacerbation of the condition. He was given indoor work but the condition steadily became worse, and several keratoses that had been present before began to grow and infiltrate. These grew comparatively rapidly, the two epitheliomata seen in the picture attaining their present dimensions in about three months' time. I applied x-rays, giving H. 2 (skin distance) to each epithelioma. Keratoses were cleared with smaller doses of x-ray and he was given an ointment containing twenty per cent (20%) of quinine, which drug is recommended by many authors on account of its resistance to penetration by sunlight. The man was evidently unfit for military service and was discharged. He signified his intention of returning to the mine, where he anticipated but little trouble with his skin. The case is presented as one of more than passing interest, particularly with regard to the age of the individual and the means which he himself devised for keeping himself comfortable.

DISCUSSION

Dr. Frank C. Knowles (Philadelphia): Xeroderma pigmentosum is an extremely rare disease. There have probably been no more than five or six cases of this condition in Philadelphia in the last fifteen or twenty years. Of this number, three occurred in one family. The name is quite descriptive, xeroderma meaning dry, scaly and roughened condition of the skin. Pigmentosum applies, of course, to the pigment. I think practically all of you have seen old-age skins, to which any one is subject after the age of forty. In this condition you have the development of pigmented spots which become roughened and scaly. These are popularly known as liver spots. A certain number of these areas tend to ulcerate and become malignant. An analogous condition is observed in xeroderma pigmentosum but this develops at an early age. As Dr. Guy has already mentioned, it occurs in early life, evidently due to some congenital defect, plus the effect of sunlight.

The case is one of extreme interest because of its rarity.

THE DIFFICULTIES AND PRACTICABILITY OF INFANT FEEDING IN A COUNTRY PRACTICE*

FRED P. SIMPSON, M.D.

MAPLETON DEPOT

The only reason which I, a general country practitioner, have to offer for reading a paper before a group of highly trained specialists such as make up this branch of our State Society, is that I hope to present the subject of infant feeding from a viewpoint a little new to most of you, I believe, and very vital to most general practitioners, I know, and that I may interest this body in the problems which confront men in my status almost daily—those problems which surround artificial feeding cases. I shall not attempt to tell you anything about the manner of feeding infants. This paper is intended more as a report of the conditions we general practitioners have to meet and of the present status of infant feeding in communities such as my own. Perhaps, when these difficulties are enumerated, they may not be so different from those faced by the general practitioner in the larger towns and cities. However, that will be brought out in the discussion.

In summing up the difficulties we must overcome to make infant feeding a success, I should place them in the order of: 1, superstition; 2, ignorance; 3, the fancied self-sufficiency of mothers of large families, and 4, the absence of ice and clean milk.

There is one definite superstition, which is found chiefly among the Pennsylvania Dutch, and which concerns malnutrition, rickets, or any chronic disease characterized by loss of weight or failure to gain weight. Such conditions are all spoken of as the "take off" among this class of people, and before, often long before a physician is consulted, such a case is "powwowed" or measured with a tape by some member of the laity, who is supposed to be able to cure this condition, which is looked upon as some mysterious disease that no method of feeding or medical treatment can correct. Precious days, and sometimes weeks, are lost before such cases are brought to a physician, and even then, the parents are often indifferent to any instructions given them, because they are, in many instances, resigned to the death of the child. Nothing is more discouraging to combat than this fatalism. When one considers that malnutrition and rickets embrace a very large percentage of chronic feeding cases and that this ridiculous superstition is by no means confined to the Dutch element in our state, it is possible to conceive something of the rôle such a superstition plays in our infant mortality.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Ignorance is our next formidable foe, ignorance as to the importance of cleanliness; as to how quickly milk can become unfit for infants' use; ignorance as to the importance of regular feeding intervals, and ignorance of the *possibilities* of correct infant feeding.

Housewives who are scrupulously clean in other matters are not cleanly enough about milk utensils, bottles, nipples, etc., because they do not *know* what is required and the slovenly housewives, of whom there are far too many, have absolutely no conception of what is required.

As to regular feeding intervals, in the vernacular, "there ain't no such thing." Except for cases who have received definite instructions from some one of the younger physicians, this is literally true, and usually it is a young mother, for the older ones pay no attention to such instructions.

A third difficulty, which perhaps is as exasperating as any, is that of the fancied self-sufficient mothers of large families. I do not know whether statistics show that large families predominate in the country rather than in the city, but I do know that no mere doctor can tell the mother of six or seven children how to feed her baby. In this instance, I think, we have a difficulty peculiar to a country practice. Your clinics, your district nurses, your milk stations, etc., have educated city mothers to a respect for a physician's, and particularly a specialist's opinion. Not so in the country; "Doc Jones" may set a broken leg, treat pneumonia or typhoid, or deliver a woman, but he can tell no mother of ten children how to feed her baby.

It may sound as though I am exaggerating this difficulty. Believe me, I am not. Attempt to get the attention of one of these self-sufficient mothers long enough to read the instructions you have so carefully and painstakingly written out and you will know the meaning of the word patience, as applied to infant feeding.

Other drawbacks to successful infant feeding are the absence of ice during the summer among many country families, and dirty milk. By that I mean that often the cow stables and the cows themselves are filthy. This latter condition is fast passing and with it our fresh milk, for the milk industry has developed rapidly in the last few years, and now all the milk except that needed for immediate use is being shipped to cities.

There are some explanations for the difficulties encountered by the physician who would educate his people to modern methods of infant feeding. Of course, we meet ignorance and superstition everywhere; they are the result of isolation, but it is difficult to understand how a superstition like that I have described can persist in the twentieth century. It is easier to understand the ignorance. As I said before, we do not have clinics, district nurses, milk depots, etc.

The economic condition of many country families explains some of the indifference to the subject. Just as in the city, there are in the country overworked mothers and indifferent fathers; families, many of them, in which the mother is so worn out by the constant drudgery that she is indifferent to the death of her child, and it is to me no wonder that these poor women think the instructions which we write out for them too complicated to be followed. They are so constantly tired that molehills seem like mountains and relatively simple instructions seem to be beyond their capabilities.

In such families the father is usually indifferent; he does not see much ahead for the child if it does get well. It requires no end of initiative on the part of the physician to wake up the moral sense of these people and to encourage them and put new heart in them. It often requires the waiving of one's fee to show sincerity of purpose and enough interest to secure the parents' coöperation. Just at present there is an increasing number of such families. We cannot expect intelligent coöperation from them, but we must treat their sick babies, and to do so requires initiative, energy and lots of humanity.

To my mind the attitude of the general practitioner of the past generation and of some of those of the present, has done more to make difficult the path of the progressive physician over this field than any other single factor. These older men had all the difficulties we now face and they did not have pediatric societies like this to crystallize for them a definite method of infant feeding. There are enough methods to-day to confuse, but there *are* definite methods. Up until the last ten years, perhaps even up to a later date, methods were vague to say the least. The result was that these men did not have (and there are some men to-day who do not have) a definite procedure for their infant feeding cases clear in their own minds. The consequence was that these older men prescribed (and some general practitioners to-day prescribe) one patent food after another and let it go at that, and it is not much wonder the older men did exactly that. However, in their efforts to get results and to appear to do something, medicines were prescribed and in most cases intelligently so. This procedure no doubt helped some individual cases, but it has unfortunately established in the minds of the laity the belief that drugs can do miraculous things and that when they fail, the case is hopeless. For this reason we have difficulty to-day in securing coöperation in feeding cases, because the laity of the country and small town expect everything from drugs.

Against these difficulties we have some advantages over the city. We have fresh air and fresh milk: fresh air when you can make the mother let it in, and nearly always fresh milk— a *great* advantage. Also, we can usually find a cool, shady spot for our acute cases.

In attempting to define the present status of infant feeding in communities such as my own I should say that, among physicians, infant feeding has made rapid strides in the past six or seven years. We in the country cannot and will not try fads. We must wait for something sensible, logical and definite; then we have something to work with and are thankful for it. As to the laity, our young mothers are receptive and often show a pleasing independence and disregard for their mother's opinions when they are contrary to those of their physician. In my own communities we have no pediatricians, but the younger men and some of the older ones no longer prescribe patent foods hit or miss. We know the indications for artificial feeding and can figure caloric values with the best of you. In other words, intelligent infant feeding is being made practical and successful in the small towns and rural districts, but in my own community there is no organized effort. It is being done by the physicians themselves; by their giving talks to the mothers of individual cases, by writing detailed instructions, by constantly talking against and fighting against superstition and ignorance, by patience and much persistence, and by an expenditure of time and energy entirely disproportionate to our financial remuneration.

We need help, you men who are familiar with child welfare organization in the city may suggest a plan to educate the mothers of this and the coming generation. There is no use wasting time and energy on those who know it all—the self-sufficient older mothers of whom I have spoken.

Not only does the laity need education along these lines, but so also does the general practitioner. He needs a method, a definite method that will take care of the *majority* of his cases. There has been too much hiding of ignorance behind the expression that every case is a law unto itself. I suppose it would be as impossible to get a group of pediatricians to standardize and adopt a method of feeding as it would be to merge all churches into one, but certainly there is a method that would fit 80 per cent of all artificial feeding cases. It would be of inestimable value to the general practitioner to have one that would fit even 50 per cent of his cases, which method he could try before deciding that the case was a special one. The patent food houses get out such methods and, for want of a better one, they are often employed by the laity and sometimes by the physician. Certainly a method of procedure sponsored by a body of specialists would receive no end of attention from us who look to you for the best along such lines.

I speak enthusiastically of a definite method because that of Dennett has clarified this troublesome problem for me. Perhaps it will not come amiss to recall it. As you all know, it is the use of whole fresh sweet milk, water and sugar mixtures computed on the caloric value per pound of the infant's weight, the milk and water being boiled and stirred three minutes, and the sugar being added as soon as the boiling is completed. The one theoretical objection to it is that the boiled mixture sometimes causes scurvy, and the one actual objection to it is that it does sometimes cause constipation. Its great advantages are that the ingredients—milk, water, and plain granulated sugar—are always available; that the mixture is easy to make; that boiling helps to "keep" the milk in communities where ice is unobtainable (in addition to making the mixture digestible) and, best of all, that it works. It has never caused scurvy in any of my cases, although infants have taken it for months without the addition of orange juice to the diet. It has been my experience that, without modification or the use of special sugars or malt extracts or any other food, these mixtures prepared after this manner will take care of nearly all infants who need an artificial food. A definite method takes away the uncertainty of a branch of medicine that has always held a terror for the general practitioner and makes of it an interesting problem to which he feels he holds the solution.

Enthusiastic as I am about this method, I would certainly lay it aside and try one agreed upon by a committee appointed from this body of specialists.

DISCUSSION

Dr. Herbert A. Bostock (Norristown): Having listened to Dr. Simpson's paper, and although not having a country practice, I can appreciate the difficulties he mentions, as these difficulties apply not alone to the country, but I think, even to a greater degree to the cities. We have the same superstition, ignorance, etc., even to a greater degree, in certain localities. The filling of our cities along the Atlantic seaboard and the spreading out into the surrounding country of immigrants from Europe, bringing with them their superstitions and customs, and allowing them to segregate in the cities, has produced this very difficulty to the city physician even more so than to the country physician.

The three divisions into which Dr. Simpson divides his difficulties are only difference in degree and not in kind. They are all due to ignorance, which after all is the stumbling block in the whole problem, be it superstition or the self-sufficient mother; and the one and only remedy for ignorance is education, and in the type of patient referred to education plus Americanization. I can agree with Dr. Simpson that the young mother is more amenable to instruction and direction than the older one. I find this also to be true in prenatal work.

As I have stated, education is the sole remedy, the establishment of child welfare leagues, prenatal clinics, instructions to mothers through the Red Cross, community centers or improvement associations, showing to these mothers not only the great numbers of lives saved, which is of great economic value, but the healthier and better baby.

Dr. John Mark Higgins (Sayre): It was with a great deal of interest that I heard Dr. Simpson speak. I do not have a country practice, but a general practice, and I certainly feel that I am in very much the same position that he is in regard to the use of Dr. Dennett's formula and directions in preparing food. They certainly can be applied more intelligently than any of the older methods, and I can readily agree with him that I do not believe the boiling of the milk causes scurvy, at least not in a sufficiently large percentage of cases to have it counted as a factor, when the good that will result from it is brought into effect. Dr. Simpson mentioned that he used it for long periods of time without the addition of any orange juice. I should like to ask him the question, why use it without? At the present time Dr. Dennett teaches that in a bottle-fed baby the use of orange juice should be started immediately. His present teaching is that a bottle-fed baby at the end of the second month should be receiving the juice of a whole orange daily. During the past two or three months I have started doing that with a small number of cases, and I certainly do not see any bad results from it, and it certainly is a tremendous help in combating constipation that results from boiled milk.

I feel that the foreign element of our population is the hardest element that we have to instruct in regard to feeding; more from the fact that they do not understand what you mean rather than from the lack of willingness to coöperate. My impression is that the majority of them want to coöperate but it is very difficult to make them understand. When an adequate visiting nursing system is established throughout our state that part is going to be materially helped.

Dr. Percival Nicholson (Philadelphia): Milk in the country, which is often used as a high-grade product, on careful examination is, owing to poor handling, not up to the standard of city milk. In such instances, when good cow's milk is not easily obtainable, some form of dry milk can be advantageously used. There are several good dry milks now on the market, and if used in conjunction with the administration of orange juice, the results will be excellent. I think we should go one step further back and request obstetricians to discontinue the use of condensed milks. The sooner doctors discontinue the administration of condensed milk, the better we are able to teach mothers the importance and necessity of proper formulæ in feeding.

Dr. Simpson (in closing): I am not surprised that Dr. Bostock said he had just as great difficulties as I have.

Dr. Higgins' point about orange juice is well brought out. I am not a pediatrician, and it is only in recent months that I found out orange juice should be given, but because I had given the boiled mixtures without orange juice, I did feel that there were enough cases that had not had it to make it appear that scurvy was not a particular menace.

I am not so sure about poor milk. In Huntingdon we have pasteurized milk. I have, in a few instances, written out milk formulæ for children there, and they did not work. I did note when these children were changed from pasteurized milk to fresh unpasteurized milk that they did work.

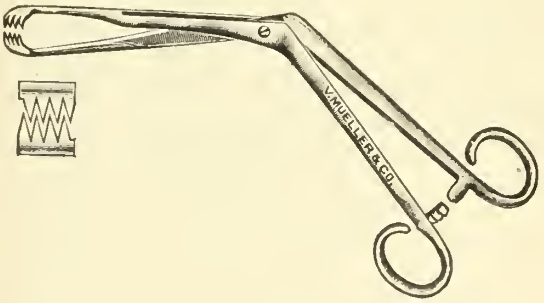
Dr. Cogill, when she spoke about the care of the mother, brought up a very important matter. We will not have to have artificial feeding when we have healthy mothers.

JOBSON'S TONSIL FORCEPS*

GEORGE B. JOBSON, M.D.

FRANKLIN

When I presented my paper on "Tonsillectomy Under Local Anesthesia" before this Society in 1919, I referred to a pair of tonsil-seizing forceps, such as you see before you, which I devised and which I have found superior for the work intended. You will observe that the joint is mortised, which will prevent the jaws overriding, even after extensive use. Also that the teeth are saw shaped, and set at such an angle that they are forced deeply into the tonsil when the jaws are closed; and when traction is made the tonsil may be pulled toward the center line without tearing it. The strong locking device prevents the jaws from springing apart, and the open loops for thumb and finger, allow the snare to be slipped over the handles, either from above or below.



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*Presented before the Section on Eye, Ear, Nose and Throat Diseases, of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

SELECTIONS

LARYNGEAL DIPHTHERIA*

JOHN BOYD McMURRAY, M.D.
WASHINGTON, PA.

The differential diagnosis of laryngeal diphtheria from the so-called spasmodic croup, is at times difficult. It is well to remember that diphtheria is not the only cause of laryngeal stenosis, but is the most common one. Streptococcic infection, tuberculosis, abductor paralysis bilateral, malignant growth, and syphilis may cause difficulty in breathing that may require intubation or tracheotomy.

Sudden difficulty in breathing, continuing throughout the day, that resists the ordinary measures of relief should be considered diphtheria. The diagnosis is easy if the dysphonia comes on during an attack of diphtheria with membrane in the nose or throat. Unfortunately, however, many cases occur without any or little sign of membrane in the nose or throat. These cases, when first seen, usually give a history of hoarseness and difficult breathing for twelve hours to a day or more. The cases of twenty-four or more hours' standing are very apt to mislead us in diagnosis. Ordinary croup does not last so long without improvement. The fact that there are intermissions in the dysphonia should not be too comforting, as I have seen several cases in which the existence of a period of relief lost the patient's life, and am sure one other would have died had a tracheotomy not been done.

Cultures: Since 1883, when Klebs and Löffler isolated the bacillus causing the disease, cultures have played an important part in diagnosis. All throat cases with exudation should be cultured. Most of us can usually diagnose diphtheria when membrane is present, particularly if its characteristics conform to our individual conception of a diphtheretic membrane. Few of us can be positive that any case of exudative sore throat is not diphtheria. Personally I am becoming less and less confident of my ability to differentiate ordinary tonsillitis from diphtheria, and consequently culture all cases to protect myself.

A positive culture report does not necessarily mean diphtheria in the absence of clinical signs, but it does always mean you have a carrier. A negative report is just as reliable as your technique in taking the culture, and the experience and skill of your laboratory man. With clinical signs and a negative report, treat as diphtheria. In laryngeal cases this is particularly true, and of much importance, as the gravity of the case is largely determined by the length of time intervening between the infection and the beginning of treatment with antitoxin. In fact, you may have one or more negative cultures in laryngeal diphtheria, only getting a positive one from a culture taken from the mucous coughed up through the tube, or from the lumen of the tube itself. If cultures are taken in all cases of sore throat you will avoid that very unpleasant experience of trying to explain to a patient how often you have seen paralysis of the palate, legs, etc., follow his particular kind of sore throat. I have had to do it for myself, and played the part of Ananias for some of my brothers in the Æsculapian art.

Dysphonia: The dysphonia accompanying laryngeal diphtheria is progressive, with intermissions in its severity. Just why these intermissions in the severity of the dysphonia occur is difficult to explain. M. E. Harding, in her studies of the Pathology of the Toxemic Stage of Diphtheria (*Lancet,* 1921), found a condition resembling edema, which she calls "Lymph Logging." This is accompanied by suprarenal changes. This lymph logging may not be constant in its severity hour after hour, and may account for these intermissions. The dysphonia is generally progressive, accompanied by some cough at times, although in my experience, this is not a constant or annoying symptom. Early inspiratory snoring is almost constant. Retraction of the suprasternal and subclavicular spaces, depression of epigastrium, and accessory respiratory muscle effort marks the progression of the laryngeal stenosis.

Cyanosis supervenes, with restlessness in the early stages. As the cyanosis deepens, restlessness gives way to stupor, relaxed skin and moderately dilated pupils.

Diagnosis: The diagnosis of laryngeal diphtheria depends upon the difficulty in breathing. Sixty per cent of all croup cases admitted to the Willard Parker Hospital required intubation. It is safe to conclude that more than that number of so-called croup cases are membraneous, and therefore diphtheric. Because there is no membrane in the throat does not warrant a diagnosis of simple croup and the adoption of a waiting policy in treatment.

Treatment: The early use of a sufficient dose of antitoxin is the first requisite in laryngeal cases. In mild and moderate cases this is given intramuscularly or subcutaneously. The intramuscular method for children under four years is preferable for the following reasons: 1st, the abundance of subcutaneous fat provides very slow absorption subcutaneously. 2d, the muscles contain few sensory nerves and therefore it is less painful. The initial dose should be not less than 20,000 units for a child two years of age, and repeated as indicated.

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*Read before the Washington County Medical Society, January 10, 1922.

In very severe or neglected cases the antitoxin should be given intravenously, 6,000 units. In infants the longitudinal sinus may be used, in older children the external juglars. When the median basilic is large enough, it is most accessible. In giving in the vein, warm the antitoxin and inject slowly. This is by far the most rapid method to get results. In adults, chills and vomiting occasionally follow, but the good results far outweigh the disadvantages. When there is a history of previous injections, there is some danger of anaphylaxis in either method. If there is a suspicion of sensitization, 0.1 c.c. should be injected intravenously, and if no reaction occurs, in ten minutes the full dose may follow. If a subcutaneous injection has been made four or five hours before the contemplated intravenous injection, it is advisable to test for sensitization. The question of sensitization comes up when it is necessary to give antitoxin four or five days in succession. There is a possibility, but I have never seen any ill effects. In one case last fall, 65,000 units were given over a period of five days without any signs of serum sickness. If there is a history of asthma, 0.1 c.c. every five minutes until 0.5 c.c. is given, will usually make it safe to give a full dose. Should anaphylactic symptoms appear, use atropin and adrenalin chloride.

Local treatment: There is probably no local treatment of much value. Emetics are contraindicated on account of the depression. Calomel fumigation or the use of the lime kettle may be of some help in mild cases.

Intubation: This should be employed before the patient is exhausted. To delay is easy, but often fatal. Do not wait for the patient to become cyanosed. If he is laboring for breath, with no relief in sight, intubate. Any cyanosis only reduces your patient's resistance, and after all your tube is only to tide over the emergency. Intubation is not well tolerated by infants, yet it is always worth trying.

Method: Wrap child in a sheet. Have assistant hold child on knee with head upright and chin slightly extended. A Denhart mouth gag, in left side of mouth, held in place with the left hand of assistant placed flat on gag. Select tube of proper size for age of child. Each set has a scale, but the size of child must be considered. A tube a little too large is better than too small. Have tube on obturator, in the introducer, and pass left index finger to locate epiglottis. Pull epiglottis forward, and slip point of tube down along index finger, at same time raising the handle of instrument. Otherwise it will glide over the arytenoids into the esophagus. If such an accident happens, withdraw the tube by the string attached to tube. Even if the tube is lost in the esophagus, no harm will result if you have another tube for the larynx.

When tube is entering the larynx, remove the obturator and gently push the tube down to its seat on the cords. Do not be rough, and hold the tube in midline. If you do not, it is possible that you may penetrate the soft tissues in the ventricle. Should this occur, it can be readily recognized by the oblique position of the tube.

When the tube in in place, turn the child face down with head low, as there will be some coughing, and this position favors drainage. If the child does not breathe, or if cyanosis deepens or color does not improve, remove the tube, clean and reinsert. Blood-tinged mucus does not mean unnecesasry roughness, as it is a common occurrence. Stay by your patient for an hour, as the tube may need removal. Before leaving see that the tube is properly seated. If possible always have a trained nurse on the case. For safety leave the string in the tube, fastened to the side of the face with adhesive. A banjo third string wrapped on silk is best, as it is hard to chew off. Splint the arms to keep the patient from pulling the tube.

Feeding: Intubated cases can usually take liquids with ease. If they choke, the Casselberry position can be used, but I find it hard to teach a child to suck fluid through a straw in any position. The bottle, breast, or spoon may be used.

Medication: Atropin sulphate, if there is much mucus, is of some use.

Extubation: Four or five days is the usual length of time to leave the tube in. Difficulty in feeding may cause early removal of the tube. A good general condition, little mucus, and quiet respiration are favorable signs. Damp or rainy weather deters some men from removing a tube from an otherwise favorable case.

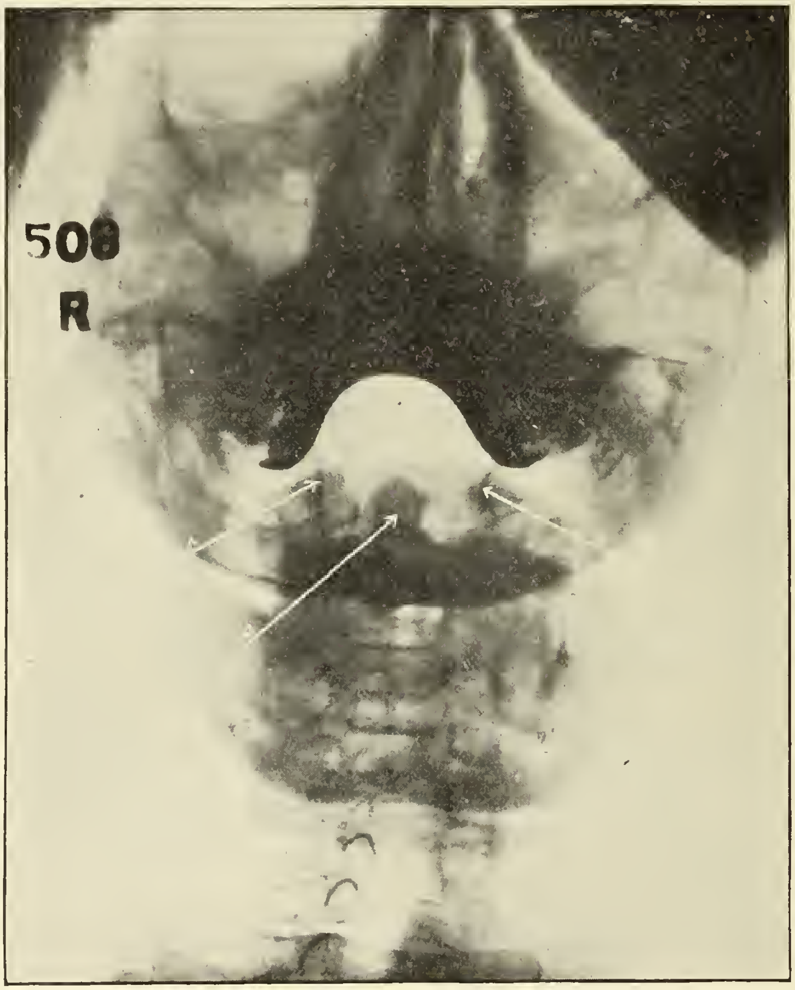
Method of Extubation: If string is attached, extubation is easy. If the extubator is used, the same position is used as in intubation. The lumen of the tube is felt with index finger of left hand, and the beak of the instrument inserted. The beak is opened, and tube withdrawn. Extubation is more difficult than intubation. If you wish to learn intubation, practice extubation. Some intubators lay the patient flat on a table, but personally I find it difficult.

BONY PROJECTIONS INTO THE TONSILS: CASE REPORT

G. R. S. CORSON, M.D.

POTTSVILLE

W. C., male, aged 45, laborer, presented himself at the hospital, complaining of occasional sore throat and some difficulty in swallowing. On ordinary examination his tonsils were found to be very much enlarged and fibrous. On proceeding to remove the tonsils under local anesthesia, after the anesthetic had been applied, when the tonsils were seized with forceps they were found to be very firm and rigid. I released the tonsils and made an examination with my finger, finding at or near the lower extremity of each tonsil a hard, firm projection, which was rigid but somewhat movable at the base. As that on the right side seemed to be more prominent than that on the left I proceeded to remove that tonsil. This left the projecting substance protruding directly into the oropharynx. It appeared to project horizontally and almost directly toward the middle line and was very much in the way now that the tonsil was removed. There was considerable hemorrhage, so instead of dissecting out the projection, I bit off with ronguer forceps about a half inch of the tip, fracturing the stump and letting it drop down along the base of the tongue against the lateral wall. It required four sutures to control the hemorrhage.



A-B.—The bony growths after being fractured at their bases and left to drop down along the lateral walls. C.—The odontoid process of the axis. This picture was taken through the mouth, widely extended.

On the left side the bony projection was not quite so prominent, although projecting in the same general direction. I did not attempt to remove it, but fractured it and let it hang down. It seemed to drop back out of the way and gave the patient no more trouble, according to his statement when I saw him six weeks afterward.

The accompanying *x*-ray picture shows the fragments in their new position. Formerly the tips of the two processes came within probably three-quarters of an inch of approximating each other. I thought at first that they were tonsilloliths, but the piece I removed was bone. The question is whether they are supernumerary ribs or elongated and malpositioned styloid processes.

In looking over the literature on the subject of anomalous bony growths in the throat, I find quite a large number reporting elongated styloid processes which projected into the tonsillar region. These projections, however, extended horizontally, and what I have been able to find in the records hang downward and inward, chiefly downward. There are, however, quite a number of cases of supernumerary ribs reported. I was unable to find any so marked as these. Speaking with one of our very best anatomists, he was inclined toward the belief that they were supernumerary ribs.

SUGGESTIONS CONCERNING COUNTY TUBERCULOSIS SANATORIA IN PENNSYLVANIA

A. P. FRANCINE, M.D.*

HARRISBURG

In view of the widespread interest in Pennsylvania aroused by the Act of April, 1921, authorizing counties to build and maintain county institutions for the treatment of tuberculosis, and the number of queries received, both from medical and lay sources, it is perhaps not out of place to publish at this time tentative suggestions as guiding principles in this movement.

It is interesting to note that seven counties submitted this question to the voters (Beaver, Berks, Cambria, Delaware, Lackawanna, Luzerne and Montgomery) at the election following the passage of this act, and that it was carried in all by large majorities; that in four of these counties (Beaver, Cambria, Lackawanna and Luzerne) sites have already been selected by the county commissioners and approved by the Commissioner of Health of Pennsylvania, as required by statute, and bought; and that the movement toward this step is being actively pushed in other counties.

It is hoped to submit this question to a referendum at the coming election in November in at least five other counties. It is, however, not well to move too fast in this matter; for instance, before a definite sentiment is manifest in a county, nor where the yearly number of deaths from tuberculosis is small. In the latter case patients can be cared for more economically by the county commissioners, directors of the poor paying for the indigent advanced cases in private sanatoria or in neighboring county sanatoria. County authorities should recognize their responsibility in this relation and the economic wisdom of this course. It is much less expensive than the building and maintaining of a very small county sanatorium.

It should be noted that hard and fast rules cannot be laid down, as local needs and problems may differ, are to an extent individual, and certainly subject to modification and adaptation. The following are offered as general and guiding principles:†

SITE

A. The most important factor in the selection of a site is accessibilty. It should not be remote from centers of population. There should be easy facilities for transportation of supplies, for the transportation of patients themselves and of visiting relatives and friends. This is also important in relation to the attraction and keeping of adequate help, both domestic and nursing. The location should be convenient for medical attendance. Inconvenient sites, such as mountainsides, are costly for building operations and involve economic waste in administration.

B. A sanatorium should not have any association with or be on the grounds of a county poor farm; neither should it be associated with a contagious disease hospital.

C. Altitude *per se* is unimportant in relation to the welfare of the patients. Ordinary clean air, away from fog and smoke nuisances, and level ground or lawns where the patients can be out and exercise, are essential. A southern exposure or slope is desirable.

D. The possibility of obtaining water and electricity from some municipality or public service corporation, and of connecting the institution with a public sewage system, or the placing of a modern sewage disposal plant, must be considered in the selection of a site, both in relation to first cost and to trouble and expense of maintenance. The contamination of streams must be avoided.

E. The idea of providing sufficient grounds for farming operations for the patients is not recommended. It is well to have sufficient ground for a truck patch to be run by the patients for the purpose of exercise. A minimum of ten acres and a maximum of fifty is suggested.

F. To give a more definite idea of the policy followed, a few of the sites approved and some not approved but submitted, may be instanced:

Not Approved: An old, but well kept-up summer hotel, of four-story frame construction, which would have required very extensive and expensive alterations, and could never have been converted into a modern, adequate sanatorium. The location and grounds were central and splendid, and the water, light and sewage disposal all right. It was felt, however, that the county could secure an equally advantageous site, and build from the ground up, at less initial cost, with much lower cost of subsequent maintenance, and secure besides a model institution especially planned and adapted to the purpose.

An already existing institution was submitted, very inaccessibly located on a mountainside. This had originally been a summer hotel and would have required much alteration. The water supply was a serious factor here. The reconstruction of a long stretch of road up the mountainside was involved. The ground surrounding the institution was very declivitous and wooded.

Several farms have been offered free to county commissioners for sanatorium purposes, but these were inaccessible and not centrally located. While a gift of this kind, generously offered, often looks like a cheap and reasonable proposition, it is by no means always so when other factors are considered and the purpose to be served kept in mind.

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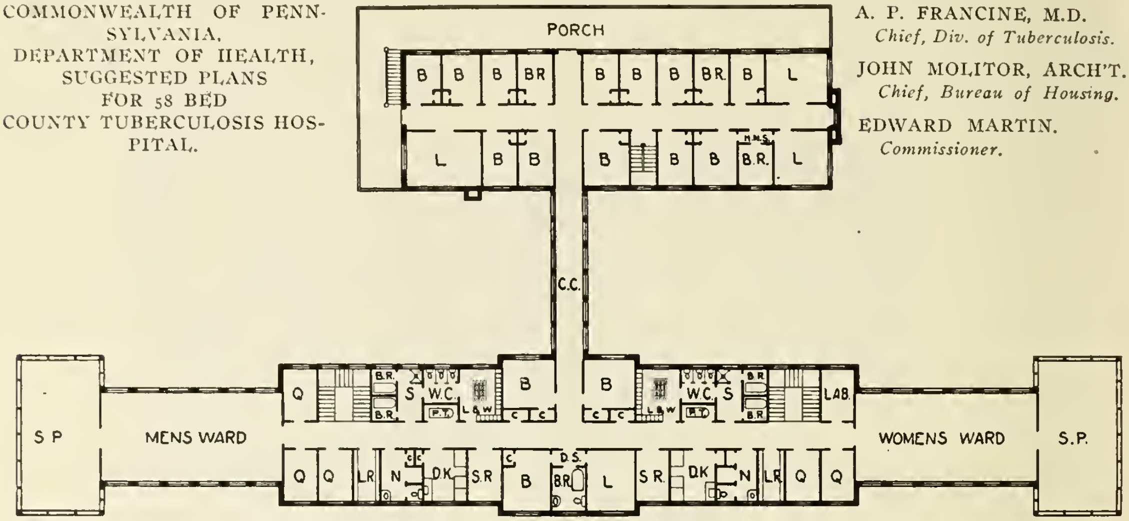
*Chief, Division of Tuberculosis, State Department of Health.

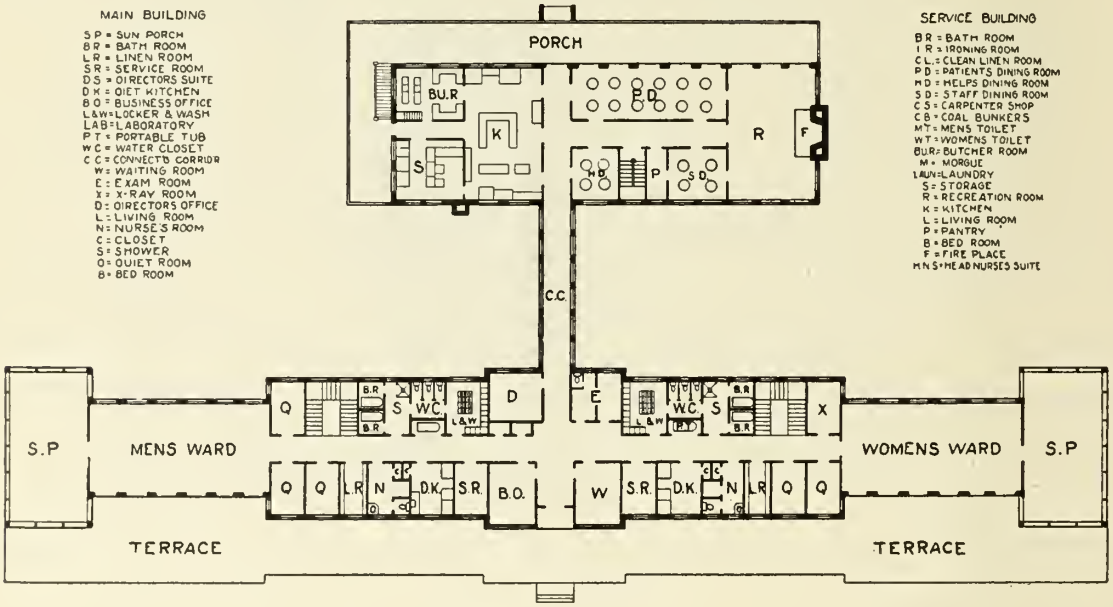
†What follows is largely a compilation and adaptation, and the writer should like to acknowledge his indebtedness to the very comprehensive report of the U. S. Public Health Service on Local Tuberculosis Sanatoria (Volume 36, Number 24); to the National Tuberculosis Association, through Dr. H. A. Pattison and Mr. J. T. Kidner; to the Bureau of Housing, Pennsylvania State Department of Health; to Dr. Wm. G. Turnbull, Director of the Pennsylvania State Sanatorium at Cresson, Pa., and others.

COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF HEALTH,
SUGGESTED PLANS
FOR 58 BED
COUNTY TUBERCULOSIS HOSPITAL.

A. P. FRANCINE, M.D.
Chief, Div. of Tuberculosis.
JOHN MOLITOR, ARCH'T.
Chief, Bureau of Housing.
EDWARD MARTIN.
Commissioner.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Sites Approved: In one county an accessible, centrally located site was submitted, with 40 odd acres, rolling ground, good view, near railroad and trolley service, and on a fine macadam state highway; with good water, available possibilities for drainage disposal and electric light connections, a well-built, commodious frame house, readily adaptable for use as an administration building.

In another county an already existing sanatorium site was approved, fairly convenient to trolley service, with good roads, fine level grounds, and buildings capable of extension and modernization, water, light, sewerage, etc.

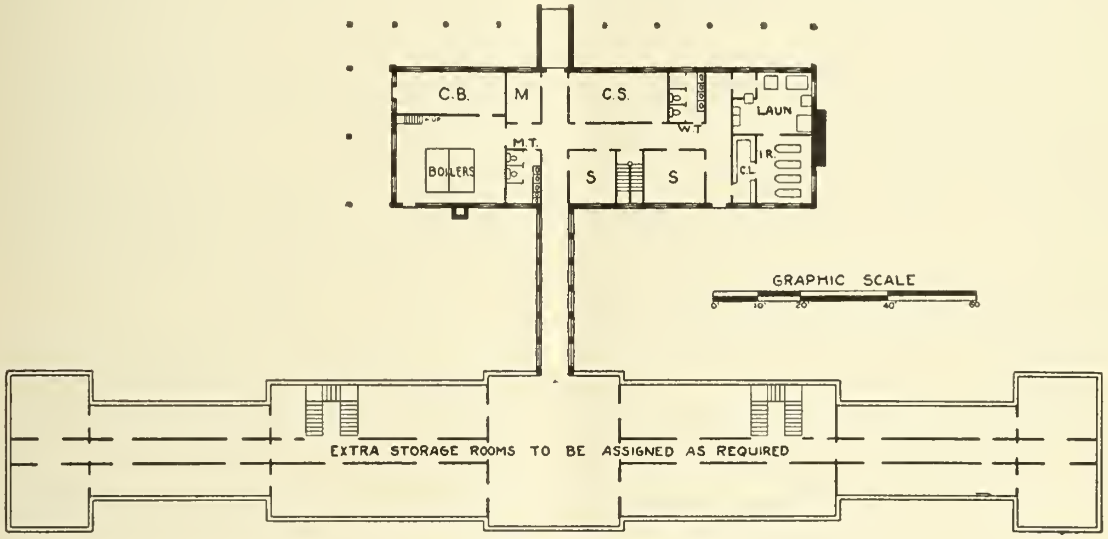
In another county approval was given to an ideal site, facing south, readily accessible, between the two largest centers of population in the county, with water, sewerage and electric light facilities available; and near a model boys' training county institution, able to supply free milk, eggs and farm products and to care for the disposal of food waste through its herd of hogs and to provide practically all the labor for upkeep of lawns, grounds, etc.

Wherever action has been taken it has been taken only following the report of a committee of three, including a sanitary engineer, and after the personal inspection of the official representatives of the Commissioner, one an expert sanatorium man of long experience and broad, sound judgment.

The effort is and has been to encourage this movement and to coöperate in it to the fullest extent, not allowing unessential details or considerations to interfere with the desire of the county commissioners for immediate action; for it should be borne in mind that a site ideal in every sense is rarely available, and that this great movement for public welfare should not be held up in striving for a narrow ideal or for the unattainable.

CONSTRUCTION

The question of outlining architectural plans for an institution of fifty or a hundred beds presents many difficulties. For example, there is no standard type. The Bureau of Housing of the State Department of Health, Mr. John H. Molitor, Chief, is prepared to furnish blue prints and plans forming a good working basis and to offer any other help. The accompanying cuts of such plans serve a useful purpose in offering an opportunity for further discussion of local needs and wishes.



BASEMENT. PLAN

A. In a county sanatorium or hospital, provision should be made for ambulatory as well as bed cases, all preferably under one roof, as it saves expense in construction and maintenance and provides for convenience of administration. It should further be so built as to allow of enlargement. It need not be fireproof. The basement and foundation walls may well be of stone or concrete up to the first floor and of frame construction above. An all-frame building of two stories may serve the purpose. Any hospital building of three stories or more must, under Pennsylvania law, be fireproof. A three-story building, therefore, adds greatly to the expense, as fire towers and elevators would be necessary. Simplicity of construction should be the keynote. Many plans are unnecessarily elaborate and costly.

It is not well to undertake to build too large an institution at first, but rather one which can be enlarged as requirements demand. Administrative quarters, however, sufficiently large to care for any contemplated or possible increase in size of hospital, should be provided at the start, as these do not usually permit of subsequent enlargement. A separate auditorium or amusement hall, for movies, etc., is advised, especially in the larger sanatoria.

B. As a general proposition, the following is probably the very cheapest, serviceable type of building: A one- or two-story frame structure, with masonry or concrete foundation walls and asbestos shingle-covered walls and roof. The basement may be limited to the area underlying the central administration quarters. There may be a separate building for laundry, boiler room, coal bins, garage, workshops, and for male and female domestic help, etc.

The cellar or basement serves for entrance for help and supplies, storerooms, locker rooms, cold storage, etc. Kitchens are sometimes placed in the basement, but this involves increased cost for maintenance and the odor from cooking is apt to permeate the building. It is perhaps better to have the kitchen on the main floor but in a separate wing, with easy access to the main building. The male and female help and their dining room may be placed here.

The first story serves for entrance for the patients, and staff examining rooms, administration rooms, patients' living and recreation rooms, dining rooms, ward and bedrooms, porches and terraces, toilet rooms, nurses' duty room, laboratory and x-ray room. The second story may be coëxtensive with the first or may occupy only the central area of it and serve for the housing of staff nurses. It may also provide additional space for patients, preferably ambulatory types, who can go up and downstairs and to and from their meals, and for children.

C. Interior arrangements should be made to provide a homelike, humane atmosphere, with an eye to the comfort and amusement of the patients. Plans should be adopted that will permit perfection of technique and administration, saving in the cost of administration, and conservation of the energy of nurses and staff. Hence the sanatorium should be under one roof, and when practicable, on one floor.

D. Dining rooms and living rooms should be located on prominent corners, so as to secure the benefit of light and air from two sides. Minor locations should never be given to important rooms. The question of interior partitions should be studied to determine whether low partitions about seven feet high would not be adequate for the completeness of separation of patients. This permits a freer circulation of air through the building. These partitions may be of a folding or collapsible type. Arrangements should give some privacy to the inmates. Some desire this; others prefer open wards. If the latter are provided, they should not be for more than ten beds each. Single rooms are necessary for patients critically ill and for terminal cases.

Ample provision should be made for open-air rest and for sleeping porches and verandas. Arrangements should facilitate the wheeling of patients on to the porches and the lawn.

PATIENTS' QUARTERS

Newly admitted cases are best housed in a reception wing or ward for a week or two, for diagnosis and classification.

The patients may be divided into those requiring hospitalization, namely, the advanced terminal cases for whose care these sanatoria are primarily intended; and ambulatory and curable types, men, women and children. It is not possible to state with exactitude the proportion in each category, as it varies in different institutions and from time to time in the same institution. It is suggested that provision be made for 70 per cent hospital cases and 30 per cent ambulant cases, the construction being of such a type that if at any time the number of patients needing hospital treatment exceeds the capacity of the hospital the excess can be treated in the ambulatory patients' quarters.

The hospital should not be limited to far advanced and hopeless cases, or many patients will not go. It should be made a distributing center from which patients, as they improve sufficiently, may return home or be graduated to the state sanatoria for camp life. By this system the patient with advanced disease does not feel that his last days have come when he is brought to a place where he sees others improving and leaving for further care.

The percentages of types suggested above differ from that advised by the U. S. Public Health Report, namely, hospital patients not less than 40 per cent, semi-ambulant patients 35 per cent, ambulant patients not more than 25 per cent; but our percentages are dictated by the fact that conditions in Pennsylvania differ from those in other states, in that the three large state sanatoria can serve the most useful purpose in caring for early or favorable types and children, and have a capacity of 2,000 beds, so that local provision for these types is not so necessary in this state as elsewhere. There should, however, be provision made for them, if only for the reason advanced above.

STAFF

For a "Grade A" Sanatorium (American Sanatorium Association), in addition to the superintendent, the laboratory and the x-ray men, one physician is required for each fifty patients, and one nurse is required for each ten bed-patients. This is a very liberal allowance, for one nurse can adequately take care of 20 or 30 cases, where half or more of them are ambulatory. This estimate is mentioned only in relation to the cost of maintenance and of providing living accommodations for the physician or his associates and also for the nursing staff.

ARCHITECT

It seems best to select a local architect who would follow established principles and would be ready to consult with experts in sanatorium construction whose services are available gratis. A competition for plans should be avoided as involving needless expense and not usually attaining the desired end.

APPROXIMATE COST OF BUILDING AND MAINTENANCE

For a one-hundred bed hospital this will be approximately as follows:

Building—Fire-resistive construction..	$2 400 to $3.500
Frame construction	1,200 to 2,000
Equipment — Laundry and kitchen equipment and all furniture, uten-	

sils, instruments, beds, bedding, china, tableware, etc.	400 to 600
Cost per Cubic Foot:	
Building—Fire-resistive construction	65c to 75c
Frame construction	30c to 50c
Maintenance per Bed per Day:	
Food supplies, etc.	$0.90
Salaries	1.00
Equipment, replacement, breakage, depreciation	.10
Total (approximately)	$2.00

The cost of maintenance varies according to location and size of institution. A sanatorium of 100 beds is relatively less expensive than one of 50 beds.

Following is the act, introduced by the Department of Health, providing for the building and maintenance of these sanatoria:

AN ACT

Authorizing the establishment by counties of hospitals for the treatment of persons afflicted with tuberculosis; providing for the management and maintenance thereof; and authorizing the incurring of indebtedness and the levy of taxes therefor.

Section 1. Be it enacted, &c., That whenever one hundred or more citizens, residents of the county, petition the county commissioners for the establishment of a county hospital for the treatment of persons afflicted with tuberculosis, such commissioners shall, at the next general or municipal election, submit to the voters of the county the question whether or not the county shall establish such hospital. Such question shall be printed at the foot of the ballot, and shall be in the form provided by the general election laws for the submission of such questions. The vote on such question shall be returned in the manner prescribed by the general election laws.

Section 2. If a majority of the voters voting upon such question at such election shall be in favor of the establishment of the hospital, the county commissioners shall have plans and specifications prepared, and shall select and purchase a site for such hospital. Such plans and specifications and the location of such site shall be approved by the Commissioner of Health before the construction of any building is commenced.

Upon the approval by the Commissioner of Health of the plans and specifications and the location of such hospital, the hospital shall be constructed and equipped in the same manner as other county buildings are constructed and equipped.

Section 3. Such hospital shall be managed by a board of trustees, consisting of five members, who shall be electors of the county, one of whom shall be a licensed physician. Such trustee shall be appointed by the court of common pleas, one for a term of five years, one for a term of four years, one for a term of three years, one for a term of two years, and one for a term of one year, or until their successors are appointed and have qualified. All appointments thereafter shall be for a full term of five years. All vacancies in the membership of the board shall be filled by the court of common pleas, upon the petition of the remaining members of the board.

The board of trustees may employ such physicians, nurses, and other employees as may be necessary to properly conduct such hospital, and shall fix their compensation, which shall be paid from the county treasury.

The board of trustees shall make general rules and regulations for the management of the hospital, and are authorized, subject to the approval of the county commissioners, to undertake such coördinated activities as will promote the usefulness of the hospital in the prevention of tuberculosis. They shall serve without compensation, except that actual expenses in connection with their service shall be paid.

Section 4. Every hospital established under this act shall be for the benefit of all of the inhabitants of such county afflicted with tuberculosis, and they shall be entitled to occupancy, nursing, care, and attendance, according to the rules and regulations prescribed by the board of trustees. The board of trustees may exclude from the use of the hospital any persons who wilfully violate any rules or regulations.

Section 5. The board of trustees may collect, from patients admitted to the hospital or from persons legally responsible for their maintenance, reasonable compensation for the treatment of such patients. They may also give free treatment to such persons as are unable to pay.

All moneys received for the treatment of patients or by gift shall be paid into the county treasury, and shall be used only for the maintenance of such hospital; and the said county commissioners are hereby authorized and empowered to receive contributions, donations, property, and trust funds for the erection and maintenance of tuberculosis hospitals provided for in this act.

Section 6. The county commissioners of every county establishing a hospital under the provisions of this act may incur or increase the indebtedness of the county, to an amount sufficient to pay the cost of purchasing a site and of constructing and equipping the hospital, by issuing coupon bonds at a rate of interest not exceeding six per centum (6%) and payable within thirty (30) years from the date of issue.

The county commissioners shall levy an annual tax in an amount necessary to pay the interest and sinking fund charges on such bonds.

Section 7. The county commissioners shall levy an annual tax sufficient for the support of such hospital, which, when collected, shall be paid into the county treasury, and such moneys shall be paid from the county treasury by warrant of the county commissioners, after itemized vouchers have been furnished by the board of trustees.

Section 8. There shall be an annual report made to the county commissioners and the State Department of Health in accordance with the form prescribed by the Commissioner of Health, who shall, by authorized agent, visit and inspect hospitals established under the provisions of this act.

Approved—The 20th day of May, A. D. 1921.

Wm. C. Sproul.

Among the professions of the United States, physicians head the list of suicides for the year 1921. The following figures are interesting: Doctors, 86; judges, 57; bank presidents, 37; clergymen, 21; editors, 10; mayors, 7; members of the legislature, 7. This record seems to indicate that the occupational strain is greater in medicine than in any of the other professions. Should not our scheme of medical practice, as relates to hours and relief, be revised, and if so, how should this be accomplished?

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS.

ACUTE PERFORATING DUODENAL AND GASTRIC ULCER WITH REPORT OF CASES

DR. JOHN D. SINGLEY

Acute perforation of the duodenum or stomach is one of the most serious catastrophies of human pathology if not recognized and the perforation closed within 24 to 36 hours. The urgency of operation is greater than in strangulated hernia. Early diagnosis and prompt operation give a high percentage of recoveries.

The possibility of perforation should be one of the strongest arguments for operation in *chronic* gastric and duodenal ulcer. Excision in gastric ulcer, and excision or infolding or reinforcing with an omental tab with gastro-enterostomy in duodenal ulcer is preventive medicine of the highest order. Many patients are willing to tolerate such symptoms as chronic ulcer produces; but the relief of symptoms is comparatively unimportant compared with the danger to life from perforation, acute or chronic, in duodenal ulcer, and from perforation and especially carcinoma in gastric ulcer. So that the ideal time at which to treat a perforation is before it occurs.

The symptoms of perforation, in the vast majority of cases, are so typical of the condition that one is rarely in doubt as to the diagnosis. However, in the atypical case it is infinitely safer to "look and see" rather than "wait and see." Almost all patients give a history of those symptoms which we have come to regard as significant of ulcer, duodenal or gastric. These are epigastric pain or burning coming on immediately or after a lapse one-half to three or four hours after meals, relieved by taking food or alkalies, or by vomiting—the so-called "hunger pain," with acid eructations. These symptoms persist for weeks or months, when they disappear with or without treatment, only to recur after a free interval of weeks or months. This periodicity of attacks is one of the most char- acute pain in the upper abdomen, intense in its a history in a patient who is seized with sudden acteristic features of duodenal ulcer. Given such severity, and who presents a board-like rigidity of this region, the diagnosis is practically established. It is said that no abdominal condition, with the exception of acute pancreatitis, presents such a marked muscular rigidity as is present in acute perforating ulcer. There may or may not be vomiting. In numerous instances, too, it has been noted that for a few days prior to perforation the pain and especially tenderness have been unusually severe and that there is some rigidity of the upper recti muscles. This has been recognized by some as the "pre-perforative stage." Under such circumstances, in a patient with a typical history and symptoms, confirmed by barium meal films, operation should be done; and if not done, the patient should be under very close observation in order that no time be lost should perforation occur.

While the diagnosis of acute perforation is readily made, in the vast majority of cases, in patients seen within 12 to 24 hours following the onset of symptoms, it is by no means easy in those seen at a later stage when the symptoms of a spreading peritonitis are present. At this time the cause of the peritonitis may be difficult or impossible of determination before the abdomen is opened. Our most reliable guide to the source of infection is a carefully taken, and carefully evaluated history as indicating previous ulcer, gall-bladder or appendiceal inflammation. Many late cases have been operated upon with a diagnosis of appendicitis, a very excusable error, since the primary pain is epigastric with subsequent involvement of the right lower quadrant as the extravasated duodenal or gastric contents find their way to this region down the outer side of the ascending colon after overflowing the right kidney pouch.

Once the diagnosis is made, or perforation strongly suspected, the abdomen should be opened without delay. Delay means a greater outpouring of gastric or duodenal contents, the contamination of a larger area of peritoneum and a higher mortality. An ample incision enables one to work with ease and celerity and reduces the amount of intra-abdominal trauma and manipulation. The escape of gas with or without fluid on opening the peritoneum is strong evidence of the correctness of the diagnosis. The stomach is grasped in a moist pad, drawn out of the wound to the right and then to the left and the pylorus and duodenum carefully inspected. If the perforation is not found in the common location, the pylorus or duodenum, the remainder of the stomach is searched on both the anterior and posterior surfaces.

There has been a great amount of discussion as to whether it is or is not advisable to add to the closure of the perforation a gastrojejunostomy. If the closure of the perforation has so narrowed the pylorus or duodenum that it is partially obstructed, then gastrojejunostomy should be done, but not otherwise. If the ulcer does not heal, gastrojejunostomy can be done at a subsequent time under conditions which are much more favorable for an operation of such magnitude. In the series of seven cases reported herewith closure of the perforation only was done. None had gastrojejunostomy.

CASE REPORTS

1. Digestive disturbance for several years past. Pain one-half to one hour after eating. Worse last two months. Seized with sudden severe abdominal pain in upper abdomen at 4 p.m. day of admission. Vomited. Board-like rigidity of abdomen with tenderness in epigastric region. On admission: P. 84, T. 100, R. 32.

Operation 6 hours after onset of pain. Perforation anterior wall of pylorus in center of indurated ulcer. Free fluid in abdominal cavity. Closed with mattress-sutures of linen. No drain. Recovered.

2. Digestive disturbance for three years, with free intervals of two to three months. Present attack began two weeks prior to admission, pain coming on half-hour after eating, relieved by food. Seized with sudden severe abdominal pain one and one-half hours prior to admission. No vomiting. Entire abdomen rigid and board-like and tender, latter most marked in epigastrium. No peristalsis. On admission: P. 96, T. 101.5, R. 34.

Operation 3½ hours after onset of pain. Perforation in middle of indurated area in duodenum about one inch beyond pyloric vein, size of straw from which fluid was escaping. Free fluid in abdominal cavity. Perforation closed with three mattress-sutures of linen reinforced by omental tag. No drain. Recovered.

3. Indefinite previous history of digestive disturbance with alcoholism. Present attack for about one month, pain coming on about two hours after food. Seized with sudden severe pain in epigastrium at 11 a.m. on day of admission. Given morphine. Intensely rigid board-like abdomen. No peristalsis. P. 110, T. 100, R. 28, Leuk. 11,600.

Operation four hours after onset of pain. Large amount of free fluid in abdominal cavity. Perforation one-half cm. in diameter, one and one-half inches beyond pyloric vein. Closed with mattress and contin. Cushing linen sutures reinforced with gastrohepatic omentum. Drain in abdominal wall only. Recovered.

4. Indefinite previous history of digestive disturbance. Shooting pains about region of stomach for past month. (Pre-perforative stage?) Seized with sudden excruciating epigastric pain to left of midline at 5 p.m. on day of admission. Admission at 11:30 p.m. P. 116, T. 100, R. 20, Leuk. 13,400, Poly 87%. Rigid board-like abdomen. Marked tenderness in epigastrium. Very slight peristalsis.

Operation 14 hours after perforation. Perforation at pylorus just proximal to pyloric vein on lesser curvature. Free fluid in flanks and pelvis. Perforation partially closed by adherent omentum. Closed with mattress-sutures of linen, reinforced by omentum. No drain in peritoneal cavity. Drain in abdominal wall. Recovered.

5. Digestive disturbance for 20 years, pain coming on one hour after eating. Alcoholic. Some vomiting. Seized with sudden severe epigastric pain evening of day before admission, hour not stated. Admission at 12:15 a.m. P. 80, T. 100, R. 20, Leuk. 18,000. Board-like rigidity of upper abdomen with marked pain and tenderness in epigastrium.

Operation 12 to 15 hours after perforation. Free fluid in abdominal cavity. A perforation one-half inch long, a half inch beyond pyloric vein and a second smaller perforation one-quarter inch beyond the first. Closed with hardened catgut and linen sutures reinforced by omental tag. Drain in abdominal wall only. Recovered. Postoperative complication, right tuberculous empyema, drained March 15, 1918. Pulmonary tuberculosis.

6. Digestive disturbance for 14 years—fullness and belching after eating and pain two to three hours after eating, relieved by soda. Vomited when pain severe. Seized with sudden severe epigastric pain while at supper. Seen two hours later. Rigid board-like resistance in upper abdomen, with marked tenderness. Pleural friction rub in right axilla confused diagnosis. Admitted at midnight. P. 96, T. 99.8, R. 22, Leuk. 11,000. Following morning friction rub still present but not so marked and had not spread. Tenderness and rigidity still present. No peristalsis.

Operation at 9:30, March 16, 1919—15 hours after perforation. Perforation size of lead pencil one inch beyond pyloric vein in duodenum in middle of indurated ulcer from which fluid was escaping. Peritoneum injected. Closed with mattress-sutures of linen, reinforced with omental tag. No drain in peritoneal cavity. Drain in abdominal wall. Recovered.

7. Long-standing history of digestive disturbance, acid eructations, pain coming on shortly after meals, relieved by soda. Taken suddenly with severe pain in left upper quadrant of abdomen at 2 p.m., just after eating, on day of admission. Face pallid, profuse perspiration, pulse 70 regular, attempts to vomit. Abdomen rigid and board-like, not distended, no peristalsis, and marked tenderness in left upper quadrant.

Operation 2½ hours after perforation. High left rectus incision. Free fluid. Large indurated area 4 cm. in diameter on lesser curvature at junction of middle and distal third of stomach. Perforation in center of this area about 1 cm. in diameter. Closed with mattress-sutures of linen, reinforced with portion of gastrohepatic omentum. Drain in abdominal wall only. Recovered.

THE BACTERIOLOGIC EXAMINATION OF PUS FROM MASTOID OPERATION WITH COMPLICATIONS FROM VARIOUS ORGANISMS

DR. ROBERT MILLIGAN

In tabulated form there follows the incidence of the various organisms found in 106 mastoids at time of operation. A culture has been taken out of each mastoid wound when the operation was done. This will show a marked prevalence of the hemolytic streptococcus pyogenes.

	No.	%	No. Comp.	% Comp.
Streptococcus Pyogenes (Hemolytic)	48	59.7	11%	23%
Streptococcus—Green	7	8.5	0	0
Pneumococcus — All Types —I, II, III, IV	12	14.6	1	8.3%
Staphylococcus Albus	20	24.3	0	0

	No.	%	No Comp.	% Comp.
Staphylococcus Aureus ...	8	9.7	0	0
Staphylococcus Citrus	1	1.2	0	0
Bacillus Proteus	4	4.8	1	25%
Bacillus Pyocyaneus	3	3.6	0	0
Bacillus Xerosis	2	2.4	0	0
Bacillus Lactis Arogenes .	1	1.2	0	0

	No.	No. Hem. Strep.	No. Pneu.	No. Proteus
Blood Stream	5	4	1	0
Blood Stream (clinical) ..	2	0	0	1
Erysipelas	3	3	0	0
Meningitis	3 (2 op.)	3	0	0
Lateral Sinis Thrombosis .	1	0	0	1
Uncomplicated	92			

It is felt that the prevalence of the streptococcic colds so common during the past year has in part accounted for the frequency with which the streptococcus pyogenes hemolyticus has been encountered. It will be noted too that it is the hemolytic streptococcus (pyogenes in type) which has given the most complications.

Under complications only four have been considered: blood stream infections, erysipelas, meningitis and lateral sinus thrombosis. The cases of minor complications, such as abscess in the neck, either true Bezold's abscess or softening of the lymphatic glands of the neck, have not been taken up as complications because they are of a less serious type. Nor have pneumonia, scarlet fever, measles or bronchitis been considered, for in these cases the mastoid has been regarded as a complication rather than as the primary disease.

Out of the series of 106 cases three had meningitis. All three had meningitis at the time they were first seen and admitted to the hospital, and they all died irrespective of the intraspinal therapy.

There were seven with a blood stream infection. Five of the seven showed a hemolytic streptococcus pyogenes in the blood stream, demonstrable in the laboratory. The remaining two showed a negative blood culture but ran the clinical picture of a positive blood stream infection. The clinical picture was identical with that of the cases in which the organism was demonstrated in the blood. All seven cases lived. They were all extremely ill over a long period of time, varying from two to six weeks.

In all the blood stream cases, save one, leucocytic extract was given night and morning for at least two weeks, varying in amount from five c.c. in small children to ten c.c. in adults at each dose. It will be noted that under this therapy, plus a suitable diet in which the patient receives a diet with no attempt at limiting the intake of food, these cases have come to an uneventful recovery.

Two recent cases not included in the chart had a demonstrable hemolytic streptococcus pyogenes in the blood stream identical with the organism obtained from the mastoid at the time of operation. Both of these cases ran the typical course of a blood stream infection and recovered under the use of leucocytic extract ten c.c. night and morning. It is felt from the history of the above cases that leucocytic extract used in hemolytic streptococcus pyogenes blood stream infections is helpful. The action of leucocytic extract may be explained by citing briefly one case.

At the time of operation a hemolytic streptococcus pyogenes was present in blood culture and in the mastoid cells. The temperature was 104 in the evening; down to 100 in the morning. Leucocytic extract was given, ten c.c., each night and morning for two weeks. The clinical chart showed no appreciable change. The patient, however, appeared in better physical condition, and was brighter than at the time of operation. The leucocyte count, however, had increased from 8,200 to 14,800 at operation. Almost despairingly the therapy was discontinued but on the following day the temperature dropped gradually over five days to normal and remained normal up to the time of his discharge on the fourth week after operation.

It is believed that the treatment of blood stream infections due to the hemolytic streptococcus pyogenes with leucocytic extract, will do good only when the original mastoid is thoroughly drained and all other foci of infection which may be present throughout the course of blood stream are evacuated.

Of the 106 cases there were three of erysipelas complicating the cases, showing a positive culture for the hemolytic streptococcus pyogenes, all of which recovered, being treated with leucocytic extract only. Whether or not this has some specific effect in helping the system to overcome the infection with this one organism cannot be said; but the review of this series is suggestive. Frederick B. Utley, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

April 10, 1922

Dr. E. B. Heckel, Presiding

SUBHYALOID HEMORRHAGE IN PREGNANCY

Dr. Edward Stieren reported the case of Mrs. M. H., aged 32, who appeared November 9, 1921, complaining of total blindness in her right eye, which had come on suddenly five days before. She was three months pregnant, and stated that following a hard day's work she lay down to take a nap. Upon getting up, the vision in right eye was found to be much blurred and steadily became worse.

Pupils in both eyes were normal in size and reaction and dilated ad maximum under homatropin. There was no central vision in right eye. Left vision, with plus 1.25 S. combined with plus 0.25 Cyl, axis 90, equaled 6/4.

In the right temporal fundus was a large dark blood clot lying on the retina in front of the vessels, slightly elevated and with sharply outlined margins. The lower part of the clot was dark red, the upper edge being much lighter in color. The upper edge of the clot extended one-half papilla diameter above the macula.

The retinal vessels were normal in both eyes and showed no evidence of sclerosis.

Iodin, gr. 1/12, in spts. ætheris nitrosi m xx, three times daily, was ordered and, in addition, saline catharsis every other day.

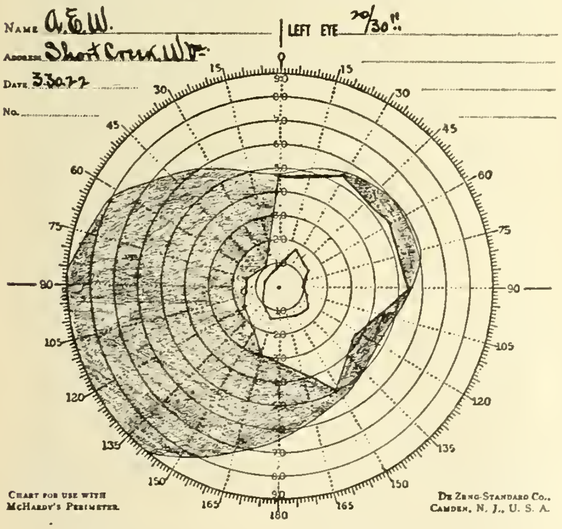
The patient was not seen again until December 14, 1921, when she appeared with the ocular condition about the same. In the meantime, she had miscarried and had been confined to bed the greater part of the time.

January 16th, there was no change in the fundus picture. The iodin mixture was increased to gr. 1/10 iodin three times daily, with salines as before. At no time did urinalysis reveal any abnormality, except an increase in phosphates. Blood and spinal Wassermanns were negative.

There was very little change in the ocular condition or vision until March 11, 1922, when the upper part of the clot had receded to the level of the lower margin of the disc and vision had improved to 3/30. Since then the improvement has been rapid, at the last examination, April 1st, vision being restored to 6/5—and the clot is but one-fifth its previous size, consisting now of a dark staining of the retina in the lower temporal region.

PITUITARY TUMOR

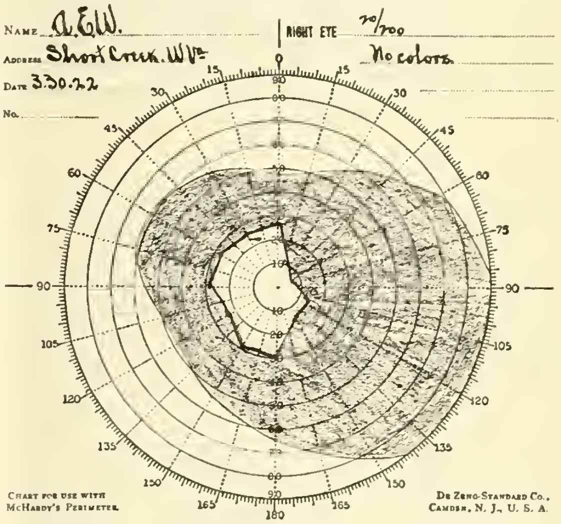
Dr. J. Clyde Markel reported the case of Mr. A. E. W., aged 39, telegraph operator, married, father of five children. *Family history:* Father died of tuberculosis when patient was five years old; mother living and well; half sister living and well; brother died in infancy; sister died two years ago of influenza.


Name A.E.W.
Left Eye 20/30
Address Short Creek W.Va.
Date 3.30.22
No.
Chart for use with McHardy's Perimeter
De Zeng-Standard Co., Camden, N. J., U. S. A.

PITUITARY TUMOR; LEFT EYE (MARKEL'S CASE)

Previous medical history: Had measles when a child and influenza two years ago; about seventeen years ago was overcome by heat, but no bad effects followed.

Present illness: About two years ago patient began to have severe headaches, especially in the right frontal and temporal regions, at times running down into the neck. Lately headaches have been quite severe, coming on almost daily and usually lasting all day. They are relieved by aspirin. In August, 1921, patient noticed vision of right eye was beginning to get dim and hazy, gradually getting worse. Has been able to continue work until the present time. Has worn glasses at times with little or no improvement. Last pair given him was O. D., minus 0.75 Sph.; O. S., 0.75 cyl. ax. 180. Gives no history of injury at any time. Has diplopia at times, lately rather frequently. Says he notices one train coming toward him slightly in advance of a second and a little above it. Is usually quite drowsy and cannot get enough sleep. Tires quite easily, especially going up steps or walking fast. Has short lapses of memory at times. Has been unable to recall names of friends during the past five or six months. Gets quite dizzy at times, especially after stooping over. Complains of severe cramps in legs at night. No convulsions or unconsciousness. Appetite good; no craving for sweets. No anosmia or gustatory symptoms, except bad taste in the morning. No epistaxis. No nausea. Sexual desires unchanged. Weight 158 to 163 pounds, with no change recently; height, five feet, eight inches. Lower teeth good; has upper plate. Fingers tapering; no crescents on nails except thumb. Skin usually dry, except cold, clammy sweating of head. No unusual amount of hair on the body. Urinates frequently—quantity never measured.


Name A.E.W.
Right Eye 20/200
Address Short Creek W.Va.
No colors.
Date 3.30.22
No.
Chart for use with McHardy's Perimeter
De Zeng-Standard Co., Camden, N. J., U. S. A.

PITUITARY TUMOR; RIGHT EYE (MARKEL'S CASE)

Vision: O. D., 20/200; O. S., 20/30. Pupils are equal and active to light and accommodation; Wernicke sign questionable. There is some tendency of right eye to diverge; convergence is very weak. Right palpebral fissure is slightly wider than the left, with a possible slight proptosis of the right eye.

Ophthalmoscopic examination shows media clear, discs vertically oval, quite pale and atrophic; no swelling of the disc or edema present.

Fields show bitemporal hemianopsia, with obliteration of all color perception except blue (central) in the right eye and a contraction of the color fields in the left.

Neurological examination was made by Dr. Geo. J. Wright, who reported as follows:

No vertigo or vomiting; gait normal; other cranial nerves normal; arm and knee jerks normal; no astereognosis; no ataxia; station fair; no tremors:

face and corneæ normal; urine negative. Blood pressure 126; blood Wassermann negative one month ago.

X-ray examination by Dr. G. W. Grier shows a large tumor of the pituitary body. The tumor seems to project downward mostly and has destroyed the floor of the sphenoid sinus and extends into the anterior portions of the sinus. The posterior clinoids are almost totally destroyed.

In discussion, Dr. Stieren thought the radiographic evidence, in the absence of stereoscopic pictures, insufficient to establish the diagnosis of neoplasm, inasmuch as the percentage of malignant growths in this region is less than 5 per cent. He believes most of such enlargement to be adenopathies, mere compensatory hypertrophies, and suggested the prolonged administration of pituitary gland substance before resorting to surgery. This treatment was successful in his hands in a case of pituitary hypertrophy, previously reported to this Society and published in the 1921 transactions of the American Ophthalmological Society.

GLAUCOMA

Dr. Fred C. Stahlman exhibited the case of Mr. L. D., age 28, who came on March 27, 1922, complaining of the following symptoms: Poor vision, dizziness, brow pain of a dull, heavy nature almost constantly. He was recently discharged from his occupation because he was not able to work safely. He was examined by an oculist in June, 1919, who reported as follows: Vision: O. D., 20/200, improved to 20/40 with plus 3.00 Sph., combined with a plus 0.50 cyl. axis 90; O. S., 20/40, improved to 20/20 by plus 1.50 Sph. combined with a plus 0.50 cyl. axis 180. Patient was told his eyes were bad, but nothing further. He was examined six weeks ago by another oculist, who told him his right eye was gone and that the left was very bad, and made out papers to that effect. Patient has been going to the Federal Board for nearly a year on account of his disability, but no record has been made of his eye condition. Present condition is as follows: O. D. V., counts fingers at three feet. Tension, 40 with McLean tonometer. O. S. V., 4/15 with plus 1.75 D. C. combined with plus .75 cyl. axis 180 equaled 4/9. Tension 35 (McLean). Fields 50° temporal, 50° down, 40° nasal, 25° upward. Right nerve is deeply cupped, with vessels coming up over the rim of the nerve. Left nerve less markedly cupped.

Patient gives a history of having been gassed while in combat service. Was confined to the hospital for several weeks, with eyes bandaged; also sustained an injury to the forehead, which was infected. Says he could not see for some time. The question will arise with the Federal Board whether anything in the service has been responsible for the glaucoma. His condition is progressive and demands operative treatment, but the exact procedure has not been decided upon, pending the adjustment with the Federal Board.

In discussion, Dr. Murdoch thought the case one of optic atrophy rather than glaucoma. Dr. Stieren did not find much loss of nerve substance with the ophthalmoscope. He believes a finding of between 35 and 40 with the McLean tonometer to be within normal limits. He thought the restricted fields might be hysterical. Dr. Weisser did not believe the case one of glaucoma, but thought it should be studied from the standpoint of malinering. Dr. Turner questioned the diagnosis of glaucoma. Dr. Weimer suggested a study of the sphenoids.

RETINITIS PIGMENTOSA

Dr. Fred C. Stahlman exhibited the case of Miss B. D., aged 19, who presented herself for examination on March 28, 1922. Vision began to grow worse at nine years of age. Father says vision was good up to that time. Never had night blindness. An older sister has similar condition from what the father reports. Sister's vision began to lessen at about the same age, but father thinks it is better recently. There are four other children in the family, some younger and some older, all of whom have good vision.

Field is reduced to 15° temporal, 15° nasal, 20° downward, and 15° upward. Eye grounds are dark, both affected nearly equally; nerves paler than normal; retina and all vessels atrophied. The pigment figures lie in front of the retinal vessels, and are of an elongated type, not the bone-corpuscle type usually seen, seem to follow the course of vessels on periphery. About a year after vision began to lessen, hearing also began to lessen. At first I thought there may be a specific history, but could elicit none. No blood tests were made. Hearing: loud conversation close. Diagnosis: The fundus picture is that of retinal atrophy. This is due to retinitis pigmentosa, notwithstanding no history of night blindness.

In discussion, Dr. Markel thought the case one of disseminated choroiditis, and asked for blood Wassermann. Dr. Stieren agreed with Dr. Markel, stating that he believed hereditary lues to be the etiological factor. The condition has come on too early in life to be retinitis pigmentosa, and lacks the typical bone-corpuscle pigmentation, as well as the essential symptom of night blindness. Dr. Murdoch's diagnosis was disseminated choroditis. Dr. Heckel thought the case one of congenital lues.

GONORRHEAL CONJUNCTIVITIS

Dr. Edward B. Heckel exhibited the case of Mr. B. C., aged 24 years, who presented himself on Tuesday, March 14, 1922, with a well-developed purulent conjunctivitis of the left eye, which began on Friday, March 10th. The patient also had an acute urethritis, and is left-handed. The clinical picture of the left eye was typical of a gonococcic infection. Patient was immediately sent to the hospital. Smears were made of the pus and proved to be positive for gonococci. Some of the pus was cultured, but the cultures failed to grow. The treatment of this case was iced normal salt solution at intervals of six hours, day and night. The first treatment was at four o'clock on March 14th. The smears taken from the eye were positive for gonococci daily until March 17th, when they were negative; that is, seventy-two hours after the iced normal salt solution was instituted. During the intervals iced pads were used continuously. The iced normal salt solution and iced pads were used continuously until March 20th, when they were discontinued, and a solution of zinc sulphate, grs. 11 to ½ ounce, was used at six-hour intervals. No other drugs or chemicals were used, except atropin, grs. 11 to ½ ounce, which was instilled once daily. The cornea showed some haziness about the fifth day, and on the eighth day there was a break in the corneal epithelium which looked as though an ulcer might develop. At this time atropin and dionin were used at six-hour intervals. The ulcer has cleared and the thickened conjunctiva has gone down so that now the eye presents a normal appearance.

In discussion, Dr. Stieren stated that he has used the treatment outlined by Dr. Heckel in gonorrheal conjunctivitis and subscribes fully to the efficiency of it. He has modified Dr. Heckel's way of applying the iced normal salt solution by using two quarts of the solution irrigated through a rubber hose about three inches long attached to a glass uterine irrigator nozzel. This method avoids the discomfort of cold hands for the operator, without any appreciable elevation in the temperature of the solution due to distance from the source of supply.

OCCLUSION OF THE CENTRAL RETINAL ARTERY

Dr. Edward B. Heckel exhibited the case of Miss A. C., aged 20 years, who presented herself on March 21, 1922, complaining that she could not see anything straight ahead with the right eye, but could see objects only to the extreme right. This condition came on suddenly on the previous Saturday night, March 18th. Ophthalmoscopic examination showed occlusion of the central artery of the retina; a distinct white opaque area all about the macula with a red spot in the macula. The left eye was normal, with vision of 20/20. In the right eye, there was only a very slight perception of light to the extreme temporal field. The patient was referred to Dr. H. B. Speer, of Coraopolis, for general examination. The laboratory findings, including a blood Wassermann, were negative; the teeth also were negative. The tonsils, however, showed some pus and and were removed on March 30, 1922. The eye now presents about the same appearance as when first seen. There is no improvement in central vision, but the right temporal field seems slightly larger.

In discussion, Dr. Stieren thought the ophthalmoscopic picture lacked three cardinal points upon which to make a diagnosis of closure of the central retinal artery, viz: the absence of blood in the superior and inferior branches of the central artery, the blanching of the retina, and the typical cherry-red macula. He saw loss of substance in the nerve head, with the lamina cribrosa showing through. He thought the mottled appearance present showed a degeneration of the retina around the macula. In a case of his a similar appearance of the macula followed a blow on the head with a crane. Dr. Weisser thought it difficult or impossible to make a positive diagnosis from examination of the present fundus picture alone. Dr. Markel thought the retina should be blanched and not hyperemic if closure of the central retinal artery had occurred. Dr. Curry thought the fundus picture not typical of occlusion atrophy.

COMPLICATED DETACHMENT OF THE RETINA

Dr. Edward B. Heckel exhibited the case of Mr. B. C., aged 66 years, first seen on December 14, 1921, with a history that the left eye had become blind within the previous week. Examination showed the right eye to be negative; the left eye to have a large detachment of the retina in the inferior temporal region and extending back to the macula. The rest of the fundus was hazy and edematous and showed some slight fine opacities of the vitreous. The question which naturally arose was whether it was a simple detachment with liquid subretinal contents or a detachment produced by neoplasm. Transillumination was rather suggestive of neoplasm. The patient was given subconjunctival salt injections by Dr. Mitchell. The vision is reduced practically to light perception and it was impossible to obtain any idea of the fields, as there were none. At present time, April 7th, the vitreous is decidedly clearer, the fundus is clearer, and the detachment not so large nor so high.

G. H. Shuman, M.D., Secretary.

ABSTRACTS FROM AMERICAN JOURNAL OF OPHTHALMOLOGY

BY MATTHEW F. CZUBAK, M.D.

PHILADELPHIA

January, 1922

Hole in the Macular Region of Both Eyes Due to Simultaneous Injury: *Dr. T. M. Li, Peking, China.*—This is the report of a case which is probably the only one of the kind on record. Both maculæ were affected at the same time by the one force. The patient was struck by a soccer football. The anatomic peculiarities of the Chinese, with the wide, low bridge of the nose, the low superciliary ridge, and eyes set in shallow orbits, allowed both eyes to be traumatized by the one impact. Vision was gradually improved under potassium iodid from R 6/20 to 6/15 and L 6/60 to 6/20.

The Treatment of Tumors of the Hypophysis: *Julius Fejer, M.D., Budapest, Hungary.*—Advanced ocular symptoms were greatly improved by x-ray treatment in these two cases of pituitary tumors.

Destructive Tuberculosis in the Eye of a Child: *Hiram R. Stilwill, M.D., Denver, Colo.*—Acute tuberculosis in a child of four began as an iritis or iridocyclitis, extended to the cornea and sclera and within seven weeks had totally destroyed the eye, which was then enucleated.

Asthenopia with Tuberculosis: *Alex. C. Magruder, M.D., Colorado Springs, Colo.*—Patients in whom a positive diagnosis of tuberculosis had been made formed the basis for this study. Nearly all complained of blurred vision for sustained near work, the eyes tiring in from five to thirty minutes. This was accompanied or followed by headaches and pain in the eyes.

Dr. Edward Jackson's definition of asthenopia is quoted: "MacKenzie's definition is, 'that state of vision in which the eyes are unable to sustain continued exercise upon near objects' without further evidence of disease; it may now be held to include only those unable to use their eyes for more than a very brief time without pain, although the eyes are without recognizable ocular conditions to account for this disability." Magruder takes issue with this definition, based on Donder's observations, and would include those low refractive errors which, in normal health, produce no symptoms; but which, as soon as the patient comes down with some asthenic condition, manifest themselves.

Jackson has stated that he has had forced upon his attention the extreme cases of asthenopia that occur among patients with tuberculosis. Sometimes they have marked refractive errors and sometimes very slight ones, but in either case, complain of very slight inaccuracy in their correcting lenses. They never get complete relief, according to Jackson, and under the best possible conditions, cannot use their eyes anything like so much as they wish.

Magruder disagrees with Jackson in the last assertion that they never get anything like complete relief from their pain and disability, but does agree with the conclusion that under the best possible conditions, they cannot use their eyes anything like so much as they wish. In the present series of 194 cases, all but one got relief from symptoms.

A good intellectual appreciation of the essential basis of asthenopia, and the difficulties of removing it, should be followed by a frank discussion of the situation with the patient. Nothing but the patient's intelligent, persistent coöperation, in living and working along the lines indicated for his or her particular case, can ever effect a cure.

In the order of their frequency, 86 or 48.6% had hyperopic astigmia, in the majority of cases of very small amount. Forty-eight and three-tenths per cent had muscle imbalance, not requiring prisms and usually corrected or improved by proper glassing. Seventy-eight had frontal headache, 12 temporal, and 12 occipital. In only ten of the frontal cases was there an accessory sinus involvement found, and in each of these there was tenderness on pressure over Ewing's point. Sixty-seven or 36.4% complained of blurring vision for near work; 50 or 27.1% had pain in the eyes; 35 or 19% had some inflammatory condition, as mild conjunctivitis or congestion. Other symptoms, as burning and itching, epiphora, photophobia, tired feeling, dizziness, twitching of the lids, were noted in varying percentages.

Magruder states that no comprehensive investigation of headache can be made without investigating the accessory sinuses.

In no one of the 184 cases was there any pathologic lesion or condition found to account for the symptoms.

Meibomian Seborrhea: *H. W. Cooper, M.D., Buffalo, N. Y.*—There are three distinct types of altered secretion:

1. A dirty white substance of a consistency somewhat similar to or somewhat thicker than that of cream cheese. This often exudes in the form of long thin threads.

2. A fluid resembling thin pus in color and consistency; no doubt a combination of 1 and 3.

3. An oily fluid, clear or somewhat turbid and yellowish in color, which is expressed in an amount far exceeding normal.

Cowper believes that there are three pathologic conditions with which altered secretion of the tarsal glands has a distinct relationship:

1. A localized congestion and thickening of the tarsal conjunctiva, usually the outer or inner third of the lower lid.

2. A chronic conjunctivitis involving the tarsal conjunctiva especially of the lower lid, producing a thickening of the whole lid, a wide intermarginal space and rounding of the lid margin. This type is sometimes responsible for a refractory mushy ulceration of the cornea.

3. Chalazion. It is frequently impossible to express secretion from the tarsal glands, but repeated attempts will usually give success and may result in disappearance of the tumor, if it is not too large.

In addition to the usual methods of treatment for altered Meibomian secretion, the treatment consists of thorough expression of the glands. Between the thumb nail of one hand and a finger nail of the other hand, this can be accomplished readily.

In a case cited, examination showed one outstanding feature. There is a peculiar substance which moves up and down over the cornea with the lid movements. It may remain across the center over a period of several winkings. The patient dislodges it by rubbing his eyes. It is a grayish white and perhaps best described as a fine soapy foam, or a coarse emulsion, not at all resembling pus or mucus. It may cover half the cornea, though generally it is left somewhat below the pupil, so that its interference with vision is perhaps the exception rather than the rule. It is to be noted particularly that the substance does not gather on the tarsal conjunctiva, nor in the cul-de-sacs, nor on the bulbar conjunctiva except in the interpalpebral space. The lids are not thickened and the conjunctiva appears normal.

In conclusion, it is stated that the cause is not known, treatment is not altogether satisfactory and further study is required.

Certain Appearances Observed in the Eyeground of the Tuberculous: *James Allen Patterson, M.D., Colorado Springs, Colo.*—For the past twenty years, Patterson has noted among the tuberculous, proven and suspected, an anomolous distribution, multiplication and tortuosity of the retinal vessels, principally venous, but frequently arterial as well.

Many of the cases examined gave no history of tuberculosis in themselves, but further inquiry disclosed the fact that one or the other of the patient's parents had tuberculosis.

After reading Jackson's article on tuberculosis as a focal disease and recalling the focal features in the tuberculous, such as headache, bad tongue, breath and indigestion, he asks if it is possible that the toxins of tuberculosis and the deficiency in eliminating them, both in the predisposed and in those whose lesions are stayed or active, may explain the anomalous appearances described.

Ocular Symptoms of Epidemic Encephalitis: *Matthias Lanckton Foster, M.D., New Rochelle, N. Y.*—The ocular symptoms in two cases of epidemic encephalitis were accurately observed and described. In the first case, that of a man 46 years old, he was first seen by Foster seven days after the onset. The pupils were small, about 1 mm. in diameter. They reacted quickly though slightly to light, but did not respond to accommodation. The left externus was paretic but not paralyzed. The eye turned in distinctly while at rest, but when the patient looked to the extreme left, it would pass the midline and then lag along more and more slowly to a point midway between the median plane and the outer canthus. Both inferior recti were paralyzed; neither eye could turn down below the horizontal plane. This paralysis had appeared since the morning visit by the attending physician. The upward rotation of both eyes, the lateral movement of the right, and the inward movement of the left were normal. There was a slight ptosis of the left upper lid. Thus there appeared to be a partial loss of the left abducens, of the left levator, palpebræ, with a total loss of both inferior recti, the appearance of which was sudden. Eleven days later, the ptosis was almost gone, and all of the other extrinsic muscles appeared to have wholly regained their functions, with the exception of the left externus. The left eyeball no longer deviated, but its outward movement was slightly restricted. The pupils were of medium size and reacted promptly to light but not to accommodation. The absence of pupillary response noted above may have been due to the high myopia of the patient, between 18 and 20 diopters.

The second patient was an adult 44 years old. He was seen 19 days after the first symptoms had been noted. At this time there was a slight ptosis of the left upper lid and paresis of the left superior and inferior recti, causing the eye to lag behind when the patient looked either up or down, with all other movements of the eyes normal. The pupils were of normal size, reacting promptly to both light and accommodation. The next day, the ptosis of the left upper lid was more marked, the paresis of the left superior and inferior recti was unchanged, but the left internus was totally paralyzed. The left eye stopped at the midplane when the patient looked to the right. The functions of the other muscles appeared to be intact. There was no pathological change in the fundus. On the following day, the paralysis of the left internus and the pareses of the left superior and inferior recti had completely disappeared; the movements of the eyes in all directions seemed to be normal, and the ptosis of the left upper lid seemed to be less. Three days later there was no ptosis and no limitation of the movements of the eyeballs in any direction. Ten days after being discharged from the hospital as cured, he was readmitted with the history that since discharge he had had several fits of drowsiness. This time he showed an inequality of the pupils and an evanescent ptosis, which, to the nurse observing it, seemed to be a precursor of an attack of drowsiness. He finally lapsed into a profound lethargy from which he could not be aroused. On raising his lids, both eyes were directed straight forward and the left cornea remained more sensitive than the right up to the death of the patient. The very fleeting nature of the ocular symptoms in this case is most striking.

STATE HEALTH DEPARTMENT HARRISBURG

Fifty dollars and costs is the price A. Levinstein, proprietor of the Fifth Avenue Rankin Hotel, Pittsburgh, paid for disobeying the state law in regard to employing food handlers infected with contagious disease. A cook and a chambermaid employed in the hotel were found to have venereal disease. They made affidavit that they had been employed without being required to present health certificates and they had not undergone medical examination during the period of their employment. Information was made before Alderman M. A. Riley, Levinstein pleaded guilty, and was fined $50.00 and costs.

The following state law is applicable to all eating and drinking places—the roadside booth and the first-class hotel of the cities:

1. You shall not employ or keep in your employ any cook, waiter, chambermaid, kitchen help, or other house servant, who suffers from trachoma (chronic grandular eyelids), active tuberculosis of the lungs, open skin tuberculosis, syphilis, gonorrhea, open external cancer, barber's itch, or who is a carrier of typhoid fever.

2. No person (this includes yourself or any member of your family) shall be employed or permitted to work as aforesaid, without having first obtained a certificate from a reputable doctor of medicine, certifying that such person is free from the diseases above mentioned. Certificates are good for a period of six months, and may be revoked at any time prior thereto if conditions warrant it. Forms can be obtained from health officers or the State Department of Health for use in second-class townships, or from the local board of health in a city, borough, or first-class township.

3. You shall not furnish to your patrons or customers any dish or other receptacle or utensil, used in either eating or drinking which has not been thoroughly cleansed with soap and hot water since it was used by another individual, and kept in a clean and sanitary condition subsequent to said cleansing.

4. You shall not furnish for public use, or for the use of your patrons or customers any towels, unless such towel be laundered or discarded after each individual use. All wash rooms shall be kept in a clean and sanitary condition.

5. You shall not furnish or keep in or about your establishment at any drinking fountain or public drinking place to which the public or your patrons or customers have access any common drinking vessel for common use. This does not prohibit the use of drinking vessels which are thoroughly cleansed by washing with soap and hot water, disinfected or destroyed after each individual use.

6. You shall not expose for sale any fruit, vegetables or other articles of food, which are eaten uncooked, unless such fruit, vegetables or other articles of food are thoroughly screened and protected from dust, flies, insects and animals.

7. You shall construct and maintain sewage facilities in such a way that no nuisance will be created and also in strict accordance with state law and rules and regulations of health authorities, no kitchen or laundry water shall be allowed to discharge or flow into any gutter, street, roadway, or public place.

The law provides that if you violate any of its provisions and are convicted thereof, you shall be sentenced to pay a fine of not less than five dollars ($5.00), or more than one hundred dollars ($100.00), or be imprisoned for a period of not more than thirty days (30) or both.

During the summer, representatives of the Division of Restaurant Hygiene, State Department of Health, will inspect the booths located along the main highways of the state.

H. M. Haine, Acting Chief of the Division of Restaurant Hygiene, states that "63 per cent of the municipalities are stringently enforcing this law, and since copies of same have been sent to all health boards, there is no excuse for its not being enforced everywhere, and a campaign to see that this is done is now under way."

At a rate of 27 cents per pupil, the Division of School Health, State Health Department, examined 546,219 children in fourth-class school districts during 1921; 94,961 pupils with physical defects were treated and the defects remedied. Fourteen thousand school buildings were inspected and 1,514 districts corrected the insanitary conditions reported; 519 tuberculous children were found and arrangements are being made to open a summer camp for them on the mountainside near Reading.

In addition to the work in the fourth-class districts, which includes only the rural schools of the state, the division formulates the directions for the medical school inspections in the first-, second- and third-class school districts, for which a summarized report of inspections and follow-up work is received. Nine hundred and fifty thousand school children are included in these districts.

As a part of the state-wide campaign against diphtheria by the Pennsylvania State Department of Health, a detailed study of conditions surrounding each death from diphtheria in the state is being made.

Col. J. Bruce McCreary, in charge of the work, reports some startling facts concerning the first one hundred deaths during the present year. Of these cases, 62 per cent show a delay of from 2 to 14 days, after the beginning of the illness, before a doctor was called—an average of 4.4 days' delay in seeking medical aid. In 21 cases the first physician called failed to diagnose the case, thereby causing a fatal delay in the administration of antitoxin. In 10 per cent of the cases no antitoxin was given. This because of the objection of parents in some instances, and in others because of the dying condition of patient when the physician was first called.

Col. McCreary states: "The element of time is of such importance in the treatment of diphtheria by the now well-known specific, antitoxin, that the above figures show lost opportunities to cure in about 93 per cent of cases resulting in death.

"The result of the study of this group of cases fixes the responsibility largely on parents for not securing medical aid in time to stop the ravages of the disease. This delay by parents is due largely to ignorance and to the fact that the parent puts off securing medical aid in the hope that they will thereby avoid quarantine."

The average age at death of these 100 cases was 3½ years.

NEW AND NONOFFICIAL REMEDIES

Pollen Diagnostics—Lederle.—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent glycerine and 33 per cent saturated solution of sodium chlorid. Pollen diagnostics—Lederle are marketed in capillary tubes containing 0.01 Cc. of a liquid, representing 100 pollen units. Pollen diagnostics—Lederle are employed in the diagnosis of hay fever (Pollenosis). (See *New and Nonofficial Remedies*, 1922, p. 232.) The following preparations have been accepted:

Arizona Ash Diagnostic—Lederle: Prepared from the pollen of Arizona ash (*Fraxinus toumeyi*).

Arizona Walnut Diagnostic—Lederle: Prepared from the pollen of Arizona walnut (*Juglans major*).

Black Walnut Diagnostic—Lederle: Prepared from the pollen of black walnut (*Juglans nigra*).

Careless Weed Diagnostic—Lederle: Prepared from the pollen of careless weed (*Amaranthus palmeri*).

Cottonwood Diagnostic—Lederle: Prepared from the pollen of cottonwood (*Populus macdougali*).

June Grass Diagnostic—Lederle: Prepared from the pollen of June grass (*Poa pratensis*).

Ragweed Diagnostic—Lederle: Prepared from the pollen of ragweed (*Ambrosia elatior*).

Red Top Diagnostic—Lederle: Prepared from the pollen of red top (*Agrostis polustris*).

Sage Brush Diagnostic—Lederle: Prepared from the pollen of sage brush (*Artemisia tridentata*).

Shad Scale Diagnostic—Lederle: Prepared from the pollen of shad scale (*Atriplex canescens*).

Sheep Sorrel Diagnostic—Lederle: Prepared from the pollen of sheep sorrel (*Rumex acetosella*).

Slender Ragweed Diagnostic—Lederle: Prepared from the pollen of slender ragweed (*Franseria tenuifolia*).

Sweet Vernal Grass Diagnostic—Lederle: Prepared from the pollen of sweet vernal grass (*Anthoxanthum odoratum*).

Timothy Diagnostic—Lederle: Prepared from the pollen of timothy (*Phleum pratense*).

Lederle Antitoxin Laboratories, New York (*Jour. A. M. A.*, June 10, 1922, p. 1803).

Neutral Acriflavine—Heyl.—The base of 3:6 diamino-10 methylchloracridine, containing about 1.5 per cent of sodium chloride as a stabilizer. The actions, uses and dosage of neutral acriflavine—Heyl are essentially the same as those of acriflavine (see Acriflavine and Proflavine, *New and Nonofficial Remedies*, 1922, p. 25). Neutral Acriflavine—Heyl is also supplied in the following forms:

Neutral Acriflavine—Heyl Tablets 0.1 Gm.

Neutral Acriflavine—Heyl Throat Tablets.

Neutral Acriflavine—Heyl "Pro Injectione" 0.5 Gm. vials.

Neutral Acriflavine—Heyl "Pro Injectione" 1.0 Gm. vials.

National Aniline and Chemical Co., New York (*Jour. A. M. A.*, June 17, 1922, p. 1893).

Luminal Tablets ¼ Grain.—Each tablet contains luminal, ¼ grain. For a discussion of the actions, uses and dosage of luminal, see *New and Nonofficial Remedies*, 1922, p. 60.

Ven Sterile Solution Procain 0.5 Per Cent.—Each ampule contains 1 Cc. of a 0.5 per cent solution of procain—N. N. R. (*New and Nonofficial Remedies*, 1922, p. 35). Intra Products Co., Denver.

Ven Sterile Solution Procain 2 Per Cent.—Each ampule contains 2 Cc. of a 2 per cent solution of procain—N. N. R. (*New and Nonofficial Remedies*, 1922, p. 35). Intra Products Co., Denver.

Ven Sterile Solution Procain 5 Per Cent.—Each ampule contains 2 Cc. of a 2 per cent solution of procain—N. N. R. (*New and Nonofficial Remedies*, 1922, p. 35). Intra Products Co., Denver (*Jour. A. M. A.*, June 17, 1922, p. 1893).

Diphtheria Antitoxin (Concentrated Antidiphtheric Serum Globulin)—P., D. and Co.—Marketed in piston syringe containers, containing, respectively, 1,000, 3,000, 5,000, 10,000 and 20,000 units. Parke, Davis & Co., Detroit.

STATE NEWS ITEMS

DEATHS

Mrs. Charles Schneider, wife of Dr. Charles Schneider, and mother of Dr. George Schneider, of Williamsport, died on June 7th.

Dr. Edward Kane, son of Mrs. Frank X. Kane, of Williamsport, died June 8th, in Portland, Oregon. Dr. Kane was 36 years of age and had practiced in Portland for eight years.

Dr. D. M. Roudabush, of Williamsport, was instantly killed July 3d, when he touched a live electric wire at his home. Dr. Roudabush was born in 1880 and was graduated from Hahnemann Medical College and Hospital, of Philadelphia, in 1906. He came to Williamsport from Altoona in October, 1921.

Dr. G. W. Metzger, eighty-two years old, the oldest practicing physician in Lycoming County, died at his home in Hughesville, on the night of July 7th. He was a veteran of the Civil War, and after his discharge attended Susquehanna University, later entering the University of Pennsylvania School of Medicine, from which institution he was graduated in 1866.

Dr. Francis W. Boyer, of Pottsville, died in Germany on July 12th. He was born in 1848 and was graduated from the University of Pennsylvania School of Medicine in 1868. Dr. Boyer was at the head of five of the leading corporations of the city of Pottsville, and letters from him, telling of his enjoyment of his trip and his good health, were received on the same day as the cablegram telling of his sudden death.

Dr. Frank L. Morrow, of North Braddock, died July 5th. After rendering first aid to a man who had been held up, beaten, shot and robbed, and while conducting the patient to the Braddock General Hospital, Dr. Morrow was killed as the result of a fast B. & O. train crashing into his automobile. He was 32 years old, a graduate of the University of Pittsburgh in 1913, a member of the Allegheny County Medical Society, the Medical Society of the State of Pennsylvania, and the American Medical Association. He leaves his widow, Mrs. Mabel Minsinger Morrow.

Dr. Edward A. Russell, one of the oldest and most highly esteemed citizens of Unionville, Center County, passed away at his home on June 1st, after being confined to his bed about three weeks with ailments incident to advanced age. Dr. Russell was born in 1837 and was graduated from Pennsylvania Medical College of Philadelphia in 1864. He started to practice medicine in Steubenville, Ohio, and later went to Wheeling, W. Va. At the outbreak of the Civil War he enlisted as examining physician for the regiment that was formed in that locality. He leaves his son, Dr. Edward Russell, Jr., a granddaughter, Miss Agnes Russell, and one sister, Mrs. T. E. Griest.

ITEMS

Dr. G. E. Pfahler, of Philadelphia, left the latter part of June on a trip to Europe.

Dr. Eliah Kaplan, of New Castle, is taking a postgraduate course at Johns Hopkins.

Dr. Walter L. Campbell, of New Castle, has returned from a trip to California with the Rotary Club.

Dr. Brant E. Sankey, of New Castle, recently attended the annual meeting of the Homeopathic Society in Chicago.

Dr. Walter B. McKinney, formerly of Philadelphia, is now a member of the Dallas County (Texas) Medical Society.

Dr. and Mrs. G. E. Holtzapple and their daughter, Mrs. H. D. Croll, of York, sailed on July 8th for a few months' tour of Europe.

Dr. Sterling King, son of Dr. W. L. King, of Muncy, was graduated in June from the Medical Department, Temple University.

Dr. H. G. Diffenderfer, of Beaverdale, spent the month of June in Boston, being enrolled in Dr. Richard Cabot's course in physical diagnosis.

Drs. C. Howard Witmer and Chas. P. Stahr, of Lancaster, were members of the School of Instruction of the State Department of Health at Mont Alto.

W. E. Delaney, Jr., of the class of 1923, Jefferson Medical College, is spending the summer with his parents, Dr. and Mrs. W. E. Delaney, of Williamsport.

Dr. F. G. Scharmann, of Johnstown, spent the month of June in Boston, taking special work in roentgenology at the Massachusetts General Hospital.

Dr. Harry Pomerantz, of Lancaster, has been spending two afternoons a week in the genito-urinary clinics of Philadelphia, where he has been doing special work in his chosen line of endeavor.

Dr. and Mrs. H. Ryerson Decker, of Pittsburgh, sailed July 4th, on the Aquatania for a two months' tour of England and the Continent. Dr. Decker will visit the leading Surgical Clinics while abroad.

On July 14th eighteen patients were examined by Dr. Horace V. Pike, of the State Hospital at Danville, at his clinic in Williamsport. Dr. Pike has been conducting a mental clinic in Williamsport for the past year.

Dr. R. J. Behan, of Pittsburgh, recently gave an address on "Pain" before the Allegany-Garrett County Medical Society at Grantsville, Md. The meeting was followed by a dinner at the Dorsey House.

Cyrus B. Follmer, son of Dr. William H. Follmer, of Williamsport, has been appointed vice consul at Lyons, France. He has been an attaché of the Lyons consulate for the past two years. He served in the World War in the ambulance service.

A double celebration took place on July 12th at the State Hospital at Fountain Springs, when the new Dr. J. C. Biddle ward was formally opened and dedicated with an address by Governor William C. Sproul, and the 1922 class of the Fountain Springs Training School for Nurses was graduated.

Dr. H. R. Price, of Port Carbon, was seriously injured on July 10th when his automobile turned over twice and plunged into the Schuylkill River. Dr. Price was turning a sharp curve when the steering gear of his machine broke and the automobile took a wild course over rough ground to the river.

On July 17th the wife of Dr. Lewis Brinton, of Philadelphia, was stabbed with an ice pick eight times in the region of the throat and chest by her Japanese cook. The cook became infuriated after Mrs. Brinton had reprimanded him for not wearing a white coat when attending to his duties in the kitchen. Mrs. Brinton's life was saved by her daughter Elizabeth, who wrestled with her mother's assailant and succeeded in disarming him, although stabbed twice in the arm. The butler, John Mulligan, also went to Mrs. Brinton's aid and choked the infuriated cook until the latter tore himself free.

KEEP GOING

Success is failure turned inside out,—
The silver tint of the cloud of doubt,
And you can never tell how close you are,
It may be near when it seems afar;
Stick to the fight when you're hardest hit—
It's when things seem worse that you mustn't quit.

(By Edgar A. Guest, from the April *Journal of Education.*)

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EDITORIALS

THE FUTURE OF PNEUMONIA TREATMENT

The serum treatment of pneumonia is being employed more and more as time goes on and we may expect that, before the lapse of many years, its use will be as popular, nay more, as obligatory, as the treatment of diphtheria by antitoxin.

Reports from many of the army camps from 1917 to 1919 have established the fact that the early administration of the serum, especially in cases of type I pneumonia, is attended with very gratifying results. For example, in one general hospital, during a period of over a year, all cases of type I pneumonia which received the type I serum before the fourth day of the disease recovered; and of the type II and type III cases having received the polyvalent serum before the fourth day, the mortality was but 3 per cent.

The treatment of type IV cases has not been so successful as that of the other types, for the type IV pneumococcus is not a specific organism. By "type IV" is meant a heterogeneous class of pneumococci which embraces all strains other than the three distinct types, viz: I, II and III. Several hundred strains have already been encountered in this class IV, hence no serum can be made which contains the antibodies of all the strains in this group. However, it appears from some reports that the administration of the polyvalent serum even in the type IV cases reduces the mortality to a certain extent.

The mortality of the various types of pneumonia untreated by serum is as follows:

Type I	25%
Type II	28%
Type III	56%
Type IV	14%

The occurrence of the various types at the Rockefeller Institute Hospital was:

Type I	31.5%
Type II	30.0%
II-a	1.3%
II-b	0.85%
II-x	2.0%
Type III	12.5%
Type IV	21.5%

It is, therefore, apparent that if the serum treatment reduces the mortality of pneumonia to 3 per cent or less it is the means of saving many lives.

There are many obstacles which at present tend to prevent the more general use of the serum, and which may be summed up as follows: (1) The necessity of ascertaining the type of the pneumonia, (2) the necessity of early administration, (3) the necessity of intravenous injection, and (4) the necessity of desensitizing.

(1) To determine the type it is necessary to inoculate a mouse with properly prepared sputum from the patient, in 8 or 10 hours to recover the pneumococci from the mouse and upon them to perform agglutination tests with sera of the several types, and at the same time to perform precipitin tests upon the washings from the peritoneal cavity of the mouse.

The various methods of employing culture media instead of mice has not proved satisfactory. Typing by the mouse method is now performed by most laboratories. The City Board of Health of Harrisburg provides for free typing of sputum from any cases within the city by the city bacteriologist and supplies antipneumococcus serum, both type I and the polyvalent, to the physicians of the city.

(2) Early administration is as necessary as in the treatment of diphtheria. Too often the physician believes his patient is doing so well that

he does not consider typing nor serum administration, but on the fifth or sixth day of the illness there is a sudden turn for the worse and he seeks the aid of the laboratory, but is informed that he is too late.

The laboratory specialist or serum enthusiast is reluctant to advise the use of serum in the later stages of the disease, for the chances are that it will fail and receive most unjust condemnation. However, we do not condemn diphtheria antitoxin if it fails when administered on the fifth or sixth day of the disease.

(3) The intravenous administration of drugs and sera is becoming more universal, but many of the older general practitioners hesitate to attempt this procedure.

(4) Desensitization is necessary when large quantities of serum are to be administered intravenously, in order to prevent anaphylactic shock. There are several methods but the quickest and easiest is to inject one or two cubic centimeters intravenously one hour before the administration of the dose, which is the remainder of the 100 cubic centimeters. If subsequent injections of 50 c.c. are administered, this procedure should be carried out each time, following in one hour the one or two c.c. intravenous injection with the remainder of the 50 c.c. From what has been said it will be seen that the first dose of the serum is 100 c.c., and subsequent doses 50 c.c. It must be warmed to body temperature and given slowly.

In one hospital where many injections were given, desensitization was carried out before each administration and an ounce and a half to two ounces of whiskey given by mouth during the injection. This hospital reports no reactions nor evidences of shock.

Certain research workers are at present attempting to reduce the volume of the antipneumococcus serum as has been done in the case of diphtheria antitoxin and from present indications their efforts will meet with success in the near future. This will decrease the difficulty of administration and antipneumococcus serum will come into more general use. G. R. M.

BLOOD CHANGES IN RADIUM AND X-RAY WORKERS

The reports of five or six deaths from aplastic anemia[1, 2] in those working with the x-rays or radium, and the supposition that they were due to undue exposure to the radiation, has justly aroused considerable interest among radiologists. Mottram[3] has studied this subject especially in England and Pfahler in America. There seems to be a tendency among those greatly exposed, to the development of a mild leukopenia and a relative lymphocytosis, a polynuclear leukocythemia with more or less eosinophilia. This is especially true if the overexposure is associated with insufficient protection and overwork, with lack of fresh air and recreation. Therefore it is advised that complete blood counts be made every three to six months, and if a tendency toward this form of anemia is found, proper measures be taken for its correction. Fortunately it has been found that ample protection can be provided, and if such damaging results are found they can be repaired if taken early; the work interrupted or decreased, and the protective measures increased.

The danger of degenerative skin changes following prolonged exposure to the x-rays still exists among radiologists, but fortunately knowledge exists and means of protection have been developed so that if used all this danger has passed.

Unfortunately, on account of these comparatively few deaths that have occurred in the pioneers in radiology, the insurance companies have become unjustly prejudiced against radiologists, and some of them even refuse to insure them, especially the older ones. These insurance companies, and the public in general, should not lose sight of the fact that these men who have made martyrs of themselves have, as a result, been the means of saving more than a thousand lives for each one lost, and of prolonging the lives of many thousand others. Thus the insurance companies have been made richer, and the companies and the public owe these men an everlasting debt of gratitude.

As suggested by Pfahler[4] a delicate and quick means of estimating the efficiency of protection consists in the carrying of a dental film for two weeks, and if blackened when developed the protection should be increased. G. E. P.

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(1) Pinch: Three Cases of Aplastic Anemia. Journal of the American Medical Association. Vol. 76, p. 1412, May 21, 1921. (Reported by the London Correspondent.)

(2) Larkins: A Case of Acute Aplastic Anemia. Arch. Rad. & Electrotherapy, May, 1921.

(3) Mottram: Arch. Rad. & Electrotherapy, Dec., 1920, and May, 1921.

(4) Pfahler: Proceedings of the American Roentgen Ray Society, September, 1922.

ADOLESCENT INSANITY—DEMENTIA PRÆCOX

The general practitioner to whom the hospital physicians look for aid in combating mental disease, would find a most interesting contribution dealing with the subject of adolescent insanity and dementia præcox in the January issue, 1922, Volume 1, No. 3, of the *American Psychiatric*

Association Journal, by Dr. D. J. McCarthy, Professor of Medical Jurisprudence of the University of Pennsylvania.

The author offers a very hopeful prognosis in many of these cases, if seen early when a thorough study of the case would reveal exciting causes which are amenable to appropriate treatment. He bases his opinion on medical logic and a large personal experience with these cases.

He groups the most common causes for the upset of the machine, or nervous mechanism, at the adolescent period, into: (1) physical, such as focal infections of the teeth and tonsils, tuberculosis, intestinal stasis, hepatic inefficiency and toxins; (2) psychogenic factors, such as worry, anxiety, and shock; (3) sexual disturbances; (4) disturbances of the endocrine system with disturbances of metabolism. The recognition and correction of these factors brings about restoration. If they are unrecognized and not corrected, dementia results.

The treatment recommended in these cases consists of removal of the cause, rest, proper food, fresh air, sunshine, preferably outdoor life, physical exercise, occupational and hydrotherapeutic remedies. The question of diagnosis should be secondary and the goal to be obtained restoration.

When it is recognized that dementia præcox represents over 50% of the standing population of our state and municipal hospitals for mental diseases, McCarthy's viewpoint should be given serious consideration by the general practitioner; for if extramural restoration may be brought about, social and economic loss could be prevented, and a tremendous burden to the taxpayer for the constant hospitalization of this great group of cases would be considerably lessened. J. A. J.

BIRTH CONTROL PRECEDING THE ROMAN DECADENCE

During these parlous war and postwar times, one hears much of birth control and propaganda favoring its adoption and one wonders what may be the ultimate outcome.

It is popularly believed that the activities of these propagandists, and of abortionists in general, are of modern development, but history proves otherwise.

Who may deny that the unwillingness to assume the duties of motherhood was not a powerful factor or the underlying cause of the disastrous decadence and demoralization of the ancient Roman nation, when, following the victorious but destructive Punic wars, the same propaganda and practices were prevalent.

In proof of the truthfulness of the above statement I would offer a quotation from Ovid, who was born in the seven hundred and eleventh year of Rome and the forty-third before the Christian era. From the nature of the subject under consideration one would suppose it was at least in middle life that the elegy was composed, so that it doubtless may be referred to about the time of the birth of Christ. Here follows the quotation:

ELEGY XIV—BOOK II—OVID

"What helps it woman to be free from war;
Nor, being armed, fierce troops to follow far,
If, without battle, self-wrought wounds annoy them,
And their own privy-weaponed hands destroy them?
Who unborn infants first to slay invented,
Deserved thereby with death to be tormented.
Because thy belly should rough wrinkles lack,
Wilt thou thy womb-enclosed offspring wrack?
Had ancient mothers this vile custom cherished,
All human kind by their default had perished;
Or stones, our stock's original, should be hurled
Again, by some, in this unpeopled world.
Who should have Priam's wealthy substance won,
If watery Thetis had her child fordone?
In swelling womb her twins had Ilia killed,
He had not been that conquering Rome bid build.
Had Venus spoiled her belly's Trojan fruit,
The Earth of Cæsars had been destitute.
Thou also, that wert born fair, had'st decayed,
If such a work your mother had essayed.
Myself, that better die with loving may,
Had seen, my mother killing me, no day.
Why tak'st increasing grapes from vine trees full?
With cruel hands why dost green apples pull?
Fruits ripe will fall; let springing things increase;
Life is no light price of a small surcease.
Why with hid irons are your bowels torn?
And why dire poison give your babes unborn?
At Colchis, stained with children's blood, men rail,
And mother-murdered Itys they bewail.
Both unkind parents; but, for causes sad,
Their wedlocks' pledges venged their husbands' bad.
What Tereus, what Jason you provokes,
To plague your bodies with such harmful strokes?
Armenian tigers never did so ill,
Nor dares the lioness her young whelps kill.
But tender damsels do it, though with pain;
Oft dies she who her paunch-wrapped child hath slain;
She dies, and with loose hairs to grave is sent,
And whoe'er see her worthily lament.
But in the air let these words come to naught,
And my presages of no weight be thought.
Forgive her, gracious gods, this one delict,
And on the next fault punishment inflict."

Abortifacient drugs and "hid irons" appear to have been the means of destruction and the result, at times, apparently, as disastrous to the mother as well as to the child as it is to-day, judging from the last few lines at the end of the poem. Adolph Koenig.

THE SHEPPARD-TOWNER MATERNITY LAW

Long years ago the statement was made that "Meddlesome midwifery is bad midwifery." No better application of this axiom could be made than a reference to the Sheppard-Towner maternity bill, which was passed by the United States House and Senate and signed by the President of the United States on November 3, 1921. This measure may be summarized as follows:

Subject to limited qualifications $1,000,000 is to be appropriated and granted to states complying with the regulations. The first million appropriation expired on July 30, 1922, but annually one million shall be appropriated for five years. Administration expense will amount to approximately $290,000, leaving a balance of $710,000 to be allotted to the states on a population basis; this proportion to be matched dollar for dollar by each state in order to obtain the grant.

A board of maternity and infant hygiene is created under the act consisting of the Chief of the Children's Bureau of the Department of Labor, the Surgeon-General of the United States Public Health Service, and the United States Commissioner of Education. The Bureau of Child Hygiene in the various state health departments is empowered to administer the act in each state.

It can be seen in the limitation of the provisions of this act that it is purely a measure of investigation and will carry with it nothing but meddlesome interference by the Federal government with state affairs as it pertains to maternity work in each state. This measure was opposed by the only woman member of Congress, Miss Alice Robertson, who said, "It will not help the mothers of America one bit, but will give a lot of jobs for others in the bureaus at Washington."

This measure was brought to the attention of the House of Delegates of the American Medical Association during its meeting in St. Louis last May, and the following resolutions were adopted:

"Whereas, The Sheppard-Towner law is a product of political expediency and is not in the interest of the public welfare, and

"Whereas, The Sheppard-Towner law is an imported socialistic scheme unsuited to our form of government, and

"Whereas, The Sheppard-Towner law unjustly and inequitably taxes the people of some of the states for the benefit of the people of other states for purposes which are lawful charges only upon the people of the said other states, and

"Whereas, The Sheppard-Towner law does not become operative in the various states until the states themselves have passed enabling legislation; therefore, be it

"*Resolved,* That the American Medical Association disapprove the Sheppard-Towner law as a type of undesirable legislation which should be discouraged."

It will not be long before another session of the Legislature of Pennsylvania will convene. Do we in this great Keystone State desire meddlesome interference with the work, which we believe that the physicians, hospitals and societies can conduct efficiently? Is there a demand in Pennsylvania for such interference, and are we incompetent to cope with the problem of aid and assistance in investigating the various phases that group about the maternity problem?

Now is the time to discuss properly this matter and protest against the passage of this measure if in the opinion of the members of our profession this is not a wise or necessary piece of legislation to be placed upon the statute books of the State of Pennsylvania.

EX LIBRIS MEDICI

THE FAKE DOCTOR

One of the most amusing, and occasionally most pathetic doctors in literature, as well as in real life, is the doctor that is not a doctor at all, but pretends to be, and tries to believe himself one. But between the real and the would-be doctor there is really not so great a difference as modern opinion would have us believe. Have you ever met a quack? I have known several, and so far as I can remember they were all agreeable, well-meaning persons, believing themselves in possession of secret or other special means of improving the health of their patients, and justly entitled to a generous fee. They are just as oblivious of the things they do not know as are our grandmothers, mothers, sisters, wives and kindly disposed friends, any or all of whom can tell just what to do for colds, rheumatism, lumbago, or any of the minor ills of life. When their patients get well they believe it to be the result of their treatment; when they do not, they are no more surprised than ourselves, for we both know that some people do not respond to treatment, and that some will die.

Now if you consider the matter seriously, isn't there about the same difference between the quack and the commonplace doctor as there is between the commonplace doctor and the superior doctor? The quack would not wittingly injure his patient, and avoids all those evils that his knowledge and common sense point out; the ordinary, commonplace doctor avoids more evils because of his greater knowledge, but to the really superior doctor, with more complete knowledge, much that he does is useless, and in many cases really harmful. The quacks and the public regard the doctors from afar, and smile at their differences of opinion, at the different methods of treatment successively sanctioned and condemned, at the numerous striking failures that follow lauded methods, and the former take courage while the latter are bewildered.

Silas Weir Mitchell wrote "The Autobiography of a Quack," and it is a very profitable book to read. I can't quote from it to advantage, for it is not that kind of a book, but one can read it with interest and amusement, and it is not without profit, as the quack doctor suffers from Addison's disease and goes steadily down hill, Dr. Mitchell taking advantage of the opportunity to give a most excellent clinical picture of that rare and interesting disease.

Whenever I talk about quack doctors somebody in the company always says, "Ah, there is Dr. Marigold." And when I say, "Was he a doctor, though?" the answer usually is, "Well, he wrote a book of prescriptions."

Now Dr. Marigold is one of Dickens' most interesting characters, and it is inexcusable not to be familiar with him. But he was not a doctor, nor did he think himself one, nor did he attempt to practice medicine. Here is what he says about his being called "Doctor."

> "I was born on the Queen's Highway, but it was the King's at that time. A doctor was fetched to my own mother, by my own father, when it took place on a common; and in consequence of his being a very kind gentleman, and accepting no fee but a tea tray, I was named Doctor out of gratitude and compliment to him. There you have me, Doctor Marigold."

Perhaps you have not read the story. Well, having lost his beloved but unhappy little daughter, and then his quarrelsome and finally insane wife, he adopted an unhappy little deaf and dumb girl, whom he transformed into as happy a creature as you could imagine, and finally educated in a special school, while he continued to travel about the country in his "cheap jack" cart, visiting the country fairs, and making a living by selling his wares. During this time, in anticipation of the return of the girl, he added a new cart, which he called the "library cart," and in which he fitted up book shelves, upon which he placed many volumes bought for the future entertainment of his only happiness, his adopted daughter. As he took much pride in his method of selling, and his "line of talk," and as she was deaf and could never hear what he was saying to make the people laugh, he conceived the notion of writing his most witty sayings down in a book for her to read, and that he called *"Dr. Marigold's Prescriptions."*

At last she returned to him, and they joyfully took up the life of the road together, but soon it was interrupted unexpectedly, and here is his account of what happened:

> Pickleson, the giant, asked him who the young man was that hung about the traveling cart, so he watched and found him to be a young man from the deaf and dumb school to which his adopted daughter had gone.
>
> "He was a-going out to China as a clerk in a merchant's house, which his father was before him. He was in circumstances to keep a wife, and he wanted her to marry him and go along with him. She persisted, No! He asked her if she didn't love him. Yes, she loved him dearly, dearly; but she could never disappoint her beloved, good, noble, generous and I-don't-know-what-all father (meaning me, the cheap Jack in the sleeved waistcoat), and she would stay with him, Heaven bless him! though it was to break her heart. Then she cried most bitterly, and that made up my mind.
>
> "While my mind had been in an unsettled state about her favoring this young man, I had felt that unreasonable toward Pickleson that it was well for him he had got his legacy down. For I often thought, 'If it hadn't been for this same weak-minded giant, I might never have come to trouble my head and wex my soul about the young man.' But once that I knew she loved him—once that I had seen her weep for him—it was a different thing. I made it right in my mind with Pickleson on the spot, and I shook myself together to do what was right by all.
>
> "She had left the young man by that time (for it took a few minutes to get me thoroughly well shook together), and the young man was leaning against another of the fir trees—of which there was a cluster—with his face upon his arm. I touched him on the back. Looking up and seeing me, he says, in our deaf-and-dumb talk, 'Do not be angry.'
>
> "'I am not angry, my good boy, I am your friend. Come with me.' I left him at the foot of the steps of the library cart, and I went up alone. She was drying her eyes.
>
> "'You have been crying, my dear.'
>
> "'Yes, father.'
>
> "'Why?'
>
> "'A headache.'
>
> "'Not a heartache?'
>
> "'I said a headache, father.'
>
> "'Doctor Marigold must prescribe for that headache.'
>
> "She took up the book of my prescriptions and held it up with a forced smile, but seeing me keep still and look earnest she softly laid it down again, and her eyes were very attentive.
>
> "'The prescription is not there, Sophy.'
>
> "'Where is it?'
>
> "'Here, my dear.'
>
> "I brought her young husband in, and put her hand in his, and my only further words to both of them were these: *'Dr. Marigold's last prescription.* To be taken for life.' After which I bolted."

She was away for five years, and Doctor Marigold continued to live in the "library cart" that he had made for Sophy. It was Christmas Eve, and he cooked and ate a good dinner, then sat at the door of the cart and dozed. In his dreams, it seemed to him that Sophy had come back, bringing her little deaf and dumb child in her arms. He awoke with a start.

> He "had started at a real sound and the sound was on the steps of the cart. It was the light, hurried tread of a child coming clambering up. The tread of a child had once been so familiar to me that for half a moment I believed I was a-going to see a little ghost.
>
> "But the touch of a real child was laid upon the outer handle of the door, and the handle turned, and the door opened a little way, and a real child peeped in. A bright little comely girl with large dark eyes. Looking full at me, the tiny creature took off her mite of a straw hat, and a quantity of dark curls fell all about her face. Then she opened her lips, and said in a pretty voice,
>
> " 'Grandfather!'
>
> " 'Ah, my God!' I cried out. 'She can speak.'
>
> " 'Yes, dear grandfather. And I am to ask you whether there was ever anyone that I remind you of?'
>
> "In a moment Sophy was round my neck as well as the child, and her husband was a-wringing my hand with his face hid, and we all had to shake ourselves together before we could get over it."

One of the most amusing of the fake doctors, is the one who was made to be a doctor against his will. You will find him in Moliere's comedy called *"Le Médecin Malgré Lui,"* or as it is called in English, "The Physician by Compulsion."

The conversation is between M. Geronte, whose daughter, in love with a man not according to her father's taste, and forbidden to have anything to do with him, feigns dumbness, and frightens her father by her inability to speak. Doctors are summoned, but nothing is accomplished.

Now it happens that a faggot-binder, who served a famous doctor for six years, has been guilty of beating his wife, who is therefore resentful, and wants to get even with him. Valere and Lucas, servants of Geronte, have been sent to find a doctor capable of effecting his daughter's cure, and while looking about for the physician who will undertake it, come upon the sulking Martine, who informs them that her husband is really the greatest physician in the whole world, but suffers so greatly from a disorder of modesty that he will not acknowledge himself to be a doctor, and will take no cases unless he is first severely beaten. They find the man, Sganarelle, binding faggots in the neighboring wood, and call upon him to assist them by showing his medical skill in the case of the ill girl, but he disclaims any medical knowledge, just as his wife said. They beat him with sticks until he finally begs for mercy, declares himself a doctor, and expresses willingness to go with them. It is thus that he becomes *"médecin malgre lui,"* the "physician in spite of himself." His new friends provide him with a doctor's gown, and they all go to the house, where they are received with joy by Geronte. Of course it must be understood that on the way, the fake doctor receives a pretty good idea of the condition of his patient from his guides. It is thus that he is able to make a rapid diagnosis of the case, and prescribe. Geronte opens the dialogue:

> Geronte.—We beg you to employ your utmost skill to relieve her affliction.
>
> Sganerelle.—Oh! don't give yourself any concern about that. Just tell me: does this malady oppress her very much?
>
> G.—Yes, sir.
>
> S.—All the better. Does she feel any great pain?
>
> G.—Very great.
>
> S.—That is excellent. Does she go——you know where?
>
> G.—Yes.
>
> S.—Freely.
>
> G.—I understand nothing of that.
>
> S.—Is the matter laudable?
>
> G.—I am no expert in these things.
>
> S.—(Turning to the patient) Give me your arm. (To Geronte) Here's a pulse which shows—that, that your daughter is dumb.
>
> G.—Why! Yes, sir, that is her ailment; you have found it out at once.
>
> S.—Ha! Ha! We great doctors know things instantly. An ignoramus would have been puzzled, and would have beat about the bush, and said: " 'Tis this, 'tis that;" not so I—I hit the mark at the first shot, and I inform you that your daughter is dumb.
>
> G.—Yes, very good. But what is the cause, I pray you, that has made her lose her speech?
>
> S.—All our best authors will tell you that 'tis an impediment in the action of her tongue.
>
> G.—But once more, what are your ideas upon this impediment in the action of her tongue?
>
> S.—Aristotle, on that head says......mighty fine things.
>
> G.—I believe you.
>
> S.—Ah! He was a great man!
>
> G.—There is no doubt of it.
>
> S.—Altogether a great man (holding out his arm from the elbow), a man who was greater than I am by fully that much. But to come back to our argument, I hold that this impediment in the action of her tongue is caused by certain humors which we men of science call peccant humors; peccant, that is to say .....peccant humors; inasmuch as the vapors formed by the exhalations of the influences that arise in the region of distempers, coming .....so to speak.....to .....Do you understand Latin?
>
> G.—Not in the least.
>
> S.—(Starting up). You don't understand Latin?
>
> G.—No.
>
> S.—(Taking various comic poses). Cabricias arci thuram, catalamus, singulariter, nominativo, Deus sanctus, estne oratio latinas? Etiam "Yes." Quare? "Why?" Quia substantivo et adjunctivum ac-cordat in generi, numerum, et casus.
>
> G.—Ah! why did I not study?
>
> S.—Now, these vapors, I tell you, passing from the

left side, where the liver is, to the right side, where the heart is, it happens that the lung, which we call in Latin *armyan*, having connection with the brain, which we name in Greek *nasmus*, by means of the hollow vein, which we denominate in Hebrew *cubile*, meets on its way the said vapors which fill the ventricles of the omoplate; and because of the said vapors.....follow my reasoning closely, I beg you—and because the said vapors have a certain malignancy.....listen carefully to this, I adjure you.

G.—Yes.

S.—Have a certain malignancy which is caused..... pay attention, if you please.

G.—I am doing so.

S.—Which is caused by the acridity of the humors engendered in the concavity of the diaphragm, it comes to pass that these vapors.....Ossabandus, nequeis, nequer, potarinum, quipsa milus. And that is exactly why your daughter is dumb.

G.—It is impossible to reason better, I am sure. Only one thing gave me pause: 'tis the whereabouts of the liver and the heart. Methinks you placed them otherwise than they are; and that the heart is on the left side, and the liver on the right.

S.—Yes, that used to be so; but we have changed all that; and now we practice medicine in an entirely new fashion.

G.—Ah!—I did not know that, I beg your pardon for my ignorance.

S.—There is no harm done; you are not under obligation to be as learned as we are.

G.—Certainly not. But sir, what think you we must do for this malady?

S.—What I think we must do?

G.—Yes.

S.—My opinion is that she should be put back in bed, and made to take as medicine plenty of bread dipt in wine.

G.—Why is that, sir?

S.—Because there is in wine and bread, taken together, a sympathetic virtue that loosens the tongue. Do you not know that they give nothing but this to parrots, who learn to talk by eating it?

G.—That is true! Oh! what a great man! Quick, plenty of bread and wine.

S.—I will come back this evening to see how she is.

SQUINT: WHEN SHALL WE OPERATE

Observation, based on a careful study of 260 private cases, has convinced A. S. Green and L. D. Green, San Francisco (*Journal A. M. A.*, Sept. 24, 1921) that less than 25 per cent of squinting eyes that come to the ophthalmologist are improved by nonsurgical methods. It thus leaves more than 75 per cent of these patients to be corrected by operation or the alternative of going for the rest of their lives with the deformity. Only 7 per cent of their patients' eyes were entirely straightened by nonoperative means, when carefully measured. And of these patients a large proportion resumed their squint when the glasses were taken off. None of the eighteen cured patients were more than 8 years of age, while thirteen of these, or 72 per cent, were 6 years of age or under. The Greens believe that great harm has resulted from the advice so frequently given by physicians to parents to wait until puberty to see whether the child will outgrow the squint. The early correction of squint is also desirable for the mental or psychic effect it has on the patient. It is of vital importance that the family physician and the public be impressed with the necessity of the child's having early attention, and not wait until puberty in the hope that the deformity will be outgrown. Procrastination means probable amblyopia in the deviating eye and operation later, in the vast majority of cases, for cosmetic reasons.

THE VITAL CAPACITY OF "CARDIACS"

The vital capacity of fifteen so-called "cardiacs" who were afflicted with aortic regurgitation and mitral stenosis was investigated by Russell Burton-Opitz, New York (*Journal A. M. A.*, June 3, 1922), by means of a spirometer devised by the author for the purpose of registering the tidal air as well as the inspiratory or expiratory quantities of air of the larger mammals. By means of a special valve, permitting a reversal of the recording mechanism, practically unlimited quantities of air may be made to pass in a continuous stream through this instrument. The vital capacities recorded closely approach the calculated normal values, and in several instances actually exceed them. The lesions were all well compensated for, although care was taken not to select these cases in a manner to favor the results. Hence, it is concluded by Burton-Opitz that a marked decrease in the vital capacity actually signifies cardiac decompensation, and that the percentage indicating its reduction may be employed as a measure of the failure to compensate. The assertion that this factor, embodying the vital capacity, portrays the condition of the patient more plastically than the blood pressure and pulse rate is questionable, he says, although it must be granted that it constitutes an important objective record in the diagnosis and prognosis of practically all cardiac disorders. It is to be emphasized, therefore, that the vital capacity does not suffer a material change in those "cardiacs" whose compensation is adequate.

Scranton's leading hotels (all European plan except the Holland), with their location and rates, follow:

Hotel Casey (400 outside rooms), Cor. Lackawanna and Adams Aves.—*Single rooms:* without bath, $2.50 and upwards per day; with running water and toilet, $2.75 and upwards per day; with shower, $3.00 and upwards per day; with tub bath, $3.50, $4.00 and $5.00. *Double rooms:* with running water, $4.00 and $5.00 per day, according to size and location; with bath, $7.00, $8.00 and $9.00 per day.

Hoted Jermyn (220 rooms), Cor. Wyoming Ave. and Spruce St.—*Single rooms:* without bath, $2.50 to $3.50; with bath, $3.50 to $5.00 per day. *Double rooms:* without bath, $4.00 to $6.00 per day; with bath, $6.00 to $8.00 per day.

Hotel Holland (62 rooms), Adams Ave., between Mulberry and Vine Sts.—*Single rooms*, $3.50 per day; *double rooms*, $7.00 per day.

Scranton House (40 rooms), Lackawanna Ave.—*Single rooms*, $1.50 per day; *double rooms*, $2.50 per day.

Lackawanna Valley House (75 rooms), Cor. Lackawanna and Franklin Aves.—*Single rooms*, $2.00; *double rooms*, $4.00 per room; three persons in room, $4.50 per room.

Hotel Marquette (85 rooms), 416-20 Adams Ave. —*Single rooms*, $1.50 and $2.00; *double rooms*, $3.00, $3.50 and $4.00.

Don't forget to make your reservations early.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

FOOD FOR LEGISLATIVE CANDIDATES

The decidedly fanciful interpretation placed by Chairman Mackey upon that phase of the Pennsylvania Workmen's Compensation Act which governs the payment of physicians for their services to beneficiaries under the act, demands of the Pennsylvania members of the medical profession intelligent and vigorous action. Before the next session of the legislature every member of that body should be acquainted with the following facts:

1. That in twenty-nine (29) of the forty-one (41) states in the Union having Workmen's Compensation laws the maximum period of time during which employers shall furnish appropriate treatment to injured employees is longer than the thirty (30) days required by the Pennsylvania act. In New York, Wisconsin and eleven (11) other states, the maximum ranges upward from eight (8) weeks. In California, Connecticut, Ohio, West Virginia and seven (7) other states the time is unlimited.

2. The maximum amount of money provided for treatment ranges from $200 to $600 in eight (8) states, and in New York, Massachusetts, Indiana and seven (7) other states is unlimited.

3. In Pennsylvania the maximum amount is $200, and under Chairman Mackey's very recent ruling none of this amount may go to hospital staff physicians in attendance upon beneficiaries under the act, if the latter happen to be "ward patients."

Not only must this latter phase of the present act be clarified so as to overcome this manifestly unfair interpretation, but its benefits must be amplified until Industry more completely assumes its social responsibilities to workers injured in the line of duty.

The Medical Legislative Conference of Pennsylvania is, no doubt, planning to bring about these changes during the 1923 Session, but the results from their efforts at Harrisburg will be measured largely by the energy displayed by the physicians "back home." Acquaint yourself with the facts—present the facts properly, and request of your legislative representative action based on fair play and the experience with workmen's compensation laws of such industrial states as Massachusetts, New York, Connecticut, Ohio, West Virginia and Indiana.

SUED IF YOU DO AND SUED IF YOU DON'T

The State Society through its Medical Defense Fund is at present responsible for the legal defense of a member alleged to have used too much antitoxin in the treatment of a patient suffering from diphtheria, while another member is being assisted in his defense of an alleged malpractice suit based on his alleged failure to use diphtheria antitoxin in the treatment of an acute throat condition.

Another member must defend an action for alleged malpractice because a former patient, a machinist, is, since the defendant removed his tonsils, unable to play the cornet.

We refer to these rather grotesque charges against licensed physicians as indicative of the apparently trivial allegations that so frequently develop under trained guidance into law suits and to emphasize the apparent necessity for defense against such annoying charges.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to July 17:

Allegheny: *New Members*—Clifford M. Lane, Westinghouse Bldg.; Milton Jena, Jenkins Arcade, Pittsburgh. *Death*—Joseph G. Wheeler, Pittsburgh (Univ. of Pittsburgh, '20), June 7, from pneumonia, aged 26. *Reinstated Members*—Elizabeth C. Mallison, 512 Sixth Ave., McKeesport; Ellerslie W. Stevenson, Farmers Bank Bldg.; Francis M. Caldwell, 130 Kirk Ave., Pittsburgh; Ralph E. Case, 1122 S. Emerson Ave., McKeesport; Abraham Finkelpearl, 1906 Fifth Ave.; Charles A. Arnold, 156 McClure Ave., Pittsburgh; George H. Gillis, c/o Women's Hospital, New York City.

Blair: *Reinstated Member*—William P. Harlos, 1428 Twelfth Ave., Altoona.

Bradford: *New Member*—Ethan F. Butler, Sayre.

Center: *Death*—Edward A. Russell, Fleming (Pennsylvania Medical College, '64), June 1, 1922, aged 85.

Fayette: *Reinstated Member*—John J. Meachem, Masontown.

Franklin: *Transfer*—Alexander Steward, of Shippensburg, from Cumberland County.

Lackawanna: *New Members*—Joseph E. Miller, 441 S. Ninth Ave.; Meyer A. Kleeve, State Hospital, Scranton; David A. Goodman, Old Forge. *Rein-*

stated Members—William H. Newman, Clark's Summit; Eugene R. Simpson, Peckville; Lucius M. Elsinger, Connell Bldg.; Thomas L. Alexander, 325 Spruce St.; Samuel Gross, 406 Wyoming Ave.; Fred Whitney Davis, 433 Wyoming Ave., Scranton.

Luzerne: *Reinstated Members*—Martin C. Gaughan, 127 Broad St.; Sanford L. Underwood, 5½ Water St., Pittston. *Removal*—Charles S. Dickinson, from Freeland, to Pottsville (Schuylkill County).

McKean: *Reinstated Members*—David E. Vogan, Kane; William J. McGraner, Port Allegany.

Monroe: *New Members*—William E. Andrew, Stroudsburg; Charles A. Le Cates, Mt. Pocono; William F. Howerter, Sciota.

Philadelphia: *New Members*—Morris L. Fuchs, 2105 N. Eighteenth St.; Peter M. Keating, 2130 Pine St.; Joseph C. Keller, 709 W. Erie Ave.; Fannie B. Margolin, 1304 S. Fifth St.; Alexander L. Gillars, 5830 Girard Ave.; Thomas H. Price, 4928 Frankford Ave.; Harry Tulsky, 1537 S. Sixth St., Philadelphia. *Reinstated Members*—Louis E. Artman, Kernan Hospital, Hillsdale, Md.; William D. Barry, 1827 Greene St., Gtn.; De Haven Hinkson, 329 N. Fortieth St.; Warren H. Johnston, 1413 S. Fifty-Eighth St.; William J. F. Martin, 2022 N. Broad St.; William S. Schantz, 5100 Warnock St.; William M. Weber, 119 S. Eighteenth St., Philadelphia; Joseph P. Tunis, Churchville (Bucks Co.). *Resignation*—William Penn Vail, Blairstown, N. J. *Removals*—Aller G. Ellis, transferred to El Paso County, Colorado Springs, Colorado; George W. Norris, from Philadelphia, to Dimock (Susquehanna Co.). *Transfer*—William W. Lermann, from Washington, D. C., to Jenkins Arcade, Pittsburgh, Allegheny County. *Deaths*—Howell S. Zulick, Philadelphia (Medico-Chirurgical, '09), June 23; Charles A. Groff, Philadelphia (Jefferson Medical, '75), July 1.

Schuylkill: *Death*—Leo T. Mullahey, Shenandoah, (Jefferson Medical, '14), May 27, aged 31.

Tioga: *New Member*—William Francis White, Wellsboro. *Transfer*—Harry A. Vosburg, Jr., of Arnot, from Jefferson County Medical Society.

Wayne: *Removal*—Edward B. Gavitte, from Lilly (Cambria Co.), to New Enterprise (Bedford Co.).

Westmoreland: *Removal*—Daniel M. Easter, from Youngwood, to c/o Medical Department, P. R. R., S. Brownsville (Fayette Co.).

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since June 17. Figures in the first column indicate county society numbers; second column, state society numbers:

June 17	Bradford	49	7108	$5.00
	Columbia	45	7109	5.00
	Luzerne	222	7110	5.00
19	Wayne	26	7111	5.00
20	Sullivan	8	7112	5.00
	Washington	122	7113	5.00
	Monroe	13-15	7114-7116	15.00
21	Montgomery	156	7117	5.00
	Wyoming	11	7118	5.00
22	Franklin	53	7119	5.00
23	Fayette	115	7120	5.00
	Lackawanna	186-194	7121-7129	45.00
27	Luzerne	223	7130	5.00
29	Luzerne	224	7131	5.00
	McKean	42-43	7132-7133	10.00
30	Blair	88	7134	5.00
	Allegheny	1186-1194	7135-7143	45.00
July 8	Philadelphia	1931-1970	7144-7183	200.00
	Bradford	50	7184	2.50
10	Tioga	30	7185	2.50
12	Center	27	7186	5.00

MEDICAL EDUCATION IN PENNSYLVANIA

The Keystone State of the Union has been progressive in many of its arts, sciences and in education. In the present instance undergraduate and postgraduate education is a subject to which we desire to call the attention of the readers of this Journal. A survey of the field of medical education will afford an opportunity to become conversant with what is offered by the medical colleges of Pennsylvania to the student or to the graduate of medicine for the present and future. With this in view the following articles are presented, and we trust that they will be read not only with interest, but that this number of the Journal will be preserved for future reference. Editor.

THE JEFFERSON MEDICAL COLLEGE

The Ninety-seventh Annual Session of The Jefferson Medical College was brought to an end with the Commencement Exercises on June 2, 1922, upon which occasion eighty-eight students were awarded the degree of Doctor of Medicine, bringing the total number upon the Alumni list up to 14,103; about 5,900 are living, and known to be in the practice of medicine. All of the members of the Graduating Class received, prior to their graduation, acceptable hospital posts, the appointments being distributed as follows: 35 appointments in 11 Philadelphia hospitals; 26 in 15 hospitals in Pennsylvania, outside of Philadelphia; 3 in 3 New Jersey hospitals; 5 in 5 New York hospitals, and 20 appointments to hospitals in other states, including Maine, Rhode Island, Ohio, Virginia, West Virginia, Tennessee, Georgia, Alabama, Wisconsin, Missouri and Michigan.

The total enrollment of students for the session 1921-1922 numbered 550. They originated in 42 states and 5 foreign countries, and were prepared for medical study in 128 different universities and colleges. No other medical school in America shows such a wide geographical or educational distribution.

The number of those appearing upon the final examination list for each class is as follows: First Year, 167; Second Year, 135; Third Year, 156; Fourth Year, 88; making a total of 546.

All of the candidates for the degree in the Fourth Year Class were successful. The number of rejections from the lower classes was as follows: First Year, 32; Second Year, 10; Third Year, 2; making a total of 44.

Under the rules of the College, those who fail of promotion are dropped from the rolls, and declined further registration. A total of 82 other students have conditional standing, their final status being determined by the results of their further work and additional examinations.

The number of applications for admission to the present First Year Class is larger than ever before. In awarding places, preference is given to those who have completed, in an unusually acceptable manner, more than the required amount of work, in institutions of first grade, and who are well recommended as regards their moral character and aptitude for medical study. It has been the desire of the College authorities to limit the number of students to within the ability of the Institution to carry on satisfactory instruction, at the same time recognizing the public need for additional physicians to supply communities which are at present without satisfactory medical service.

The destruction of the old hospital will begin shortly, in order to make way for the addition to the present hospital. The old hospital to be destroyed was completed in 1877, and was one of the first hospitals in this country to be constructed, and entirely owned and controlled by a medical school in order to provide adequate clinical facilities for its students. The old amphitheatre in which some of the most famous men in America and abroad have held clinics in the past forty-five years, is also to be demolished, and succeeded by one of more modern construction.

Ross V. Patterson, Dean.

THE TEMPLE UNIVERSITY

Medical Department

The School of Medicine had a very successful year for the session 1921-22, and is looking forward with greatest interest to the next session, which will begin September 25, 1922.

The following changes have been made in the Faculty: Dr. Chas. E. deM. Sajous resigned on account of age limit, and was made Emeritus Professor of Therapeutics. Dr. Arthur C. Morgan was elected Professor of Applied Therapeutics, to fill the vacancy. The vacancy in the Chair of Chemistry was filled by the election of Dr. Melvin A. Saylor. The following Clinical Professors were advanced to the Major Faculty: Dr. Wm. A. Hitschler, Professor of Rhino-Laryngology; Dr. Harry Hudson, Professor of Orthopedics; Dr. Collier F. Martin, Professor of Proctology; Dr. Henry J. Off, Professor of Otology; Dr. Gustavus C. Bird, Professor of Roentgenology and Radio-Therapy; Dr. W. Hersey Thomas, Professor of Genito-Urinary Surgery; Dr. Albert Strickler, Professor of Dermatology and Syphilology; Dr. Max H. Bochroch, Professor of Neurology; and Dr. Wm. A. Steel, Professor of Principles of Surgery.

During the session just closed a Department of Diseases of the Chest was established, in charge of Dr. Abraham J. Cohen, Clinical Professor. Arrangements were completed for teaching Diseases of the Chest in the Wards and Dispensary of the Eagleville Sanatorium for Consumptives, which maintains a hospital of fifty beds, and a large dispensary service at the Henry Phipps Institute, Philadelphia, and a sanatorium of one hundred and twenty-five beds at Eagleville, Montgomery County, Penna. There was also established a course of lectures on Tropical Medicine under the able lectureship of Dr. Thomas W. Jackson. All of the laboratories have undergone reconstruction. Three all-time professors were added to the Faculty. A new dissecting room and a laboratory for teaching applied anatomy have been installed. Numerous new books and medical journals have been added to the library. Arrangements are being made to add a wing to the Samaritan Hospital, in order to increase the number of beds for teaching purposes.

Frank C. Hammond, Dean.

UNIVERSITY OF PENNSYLVANIA

School of Medicine

Certain changes in the faculty of the School of Medicine have recently occurred, as must happen with the passage of time. Drs. Deaver and Marshall retired this spring on account of the statute of the University concerning the age of retirement of teachers. Dr. Charles H. Frazier has been elected the John Rhea Barton Professor of Surgery to succeed Dr. Deaver. As Dr. A. E. Taylor resigned a year ago from his position as Benjamin Rush Professor of Physiological Chemistry and Dr. Marshall, who was Professor of Chemistry and Toxicology, retired this spring, the Trustees decided to combine these two chairs and have elected Dr. D. Wright Wilson to succeed Drs. Marshall and Taylor. Dr. Wilson has been Associate Professor of Physiological Chemistry at Johns Hopkins School of Medicine. Dr. Hendrix, Assistant Professor of Physiological Chemistry for some years in the University of Pennsylvania, has just been called to the University of Texas as Professor of Physiological Chemistry and will take up his duties there this fall.

The School of Medicine has decided to raise the requirements for admission to a plane equal to that already adopted by a number of other good medical schools, such as California, Columbia, Cornell, Hopkins, Western Reserve, Leland Stanford and Yale. Next year three years of college work will be required for admission; the following year, 1924, only college graduates or seniors "in absentia" will be admitted. By a senior in absentia is meant a student who has had three years of college work of such grade and amount that his college will be willing to confer on him a degree, after he has completed a year in a medical school. A certain number of colleges are now willing to coöperate in such a plan, but some others do not yet see the advantage of this scheme. For some years practically all the students admitted from State College have had three years of premedical work, and when these students have successfully completed their first year in the School of Medicine of the University of Pennsylvania, State College then confers a degree upon these students who have been away during their senior year—"seniors in absentia."

It is hoped that other colleges will agree to take part in such a combined seven years' course, leading to a Bachelor's degree and to a Doctor of Medicine degree. In 1924 and thereafter students who prepare for admission to the School of Medicine of the University of Pennsylvania at colleges unwilling to coöperate in this seven-year combined course will have to graduate before they can enter the Medical School. Under these new requirements every student by the beginning of the second year in the School of Medicine will have a college degree. Such requirements will not reduce the size of the classes, as well over 100 college graduates apply for admission every year.

The problem of selecting a first year class is becoming more troublesome. The number of applicants for admission is increasing and only a fraction of these can be admitted. The number of students preparing for medicine in the College of the University of Pennsylvania has reached a point where, if all were admitted, there would be no room for the many who wish to enter, who prepared at other colleges throughout the United States. Most of the students in the College of the University of Pennsylvania are Philadelphia boys, and if the Medical School admitted a class composed almost entirely of such students, it would of course become a purely local institution, whereas in the past it has always been recognized as one of the most cosmopolitan of schools, and has taken pride to itself on this account.

All the leading schools of the country are at present embarrassed by the number of applications for admission. The relative merits of medical schools are so well known to-day, largely through the publicity given by the American Medical Association, that students no longer usually apply to the nearest school, but seek admission to the best schools, no matter how distant they may be. So that although at present the schools of this country can probably accommodate all who wish to study medicine, the schools in the large cities with great clinical facilities are the favored ones, and the problem of selecting the most promising students from the mass of applicants becomes more complicated each year. So many factors have to be taken into consideration in selecting a limited class, and most of the schools now have limited the size of their classes—scholarship, amount and kind of preparation, geographical representation, character and personality all should be considered. That sons and relatives of alumni must be shown special consideration seems to be generally admitted.

Committees of admission, although undertaking their thankless task with all the impartiality humanly to be expected of them, invariably are accused of unfairness. The University of Pennsylvania has been admitting a first year class of 100 students and may be able to increase this a little in the immediate future, but in order to teach modern medicine properly, classes must be limited. Universities have not funds enough to engage two shifts of teachers even if the teachers were available. Student fees do not to-day pay for the cost of running a medical school. More students mean greater deficits. Satisfactory laboratory teachers are almost unprocurable. Very few graduates of medicine nowadays take up laboratory teaching as a career. Medical school faculties will be found to contain many teachers who have no medical degree. Doctors of Philosophy have been drafted to perform the necessary work. This is all right so long as the faculty does not include too large a percentage of such nonmedical teachers. Probably every medical school of the country is at present in the market for teachers of the pre-clinical subjects, but they are not to be found. The allurements of practice are too great in contrast to the small financial return of laboratory work. With professors of Anatomy, Chemistry, Pathology and other subjects getting in many schools but three or four thousand dollars and instructors and other subordinate teachers getting proportionately less, it is easily explained. The most such men can at present look forward to is a professorship in one of a very few leading schools with a salary of about eight thousand dollars. The rank and file, however, have to get along with a salary of three or four thousand, even should they become professors. William Pepper, Dean.

THE MEDICO-CHIRURGICAL COLLEGE

Graduate School of Medicine of the University of Pennsylvania

Historical: In 1916 a merger was effected between the University of Pennsylvania and the Medico-Chirurgical College and Hospital of Philadelphia. The Medico-Chirurgical College thereupon retired from the field of undergraduate medical education and the institution became an integral part of the University under the legal title: The Medico-Chirurgical College and Hospital, Graduate School of Medicine of the University of Pennsylvania.

While a beginning had thus been made toward the organization of a Graduate School of Medicine under the University, the onset of the war in 1917 delayed the project.

In 1918 the Philadelphia Polyclinic and College for Graduates in Medicine merged with the University, likewise retiring from its former type of instruction and becoming a further integral portion of the developing organization of the Graduate School of Medicine.

By the summer of 1919 so many of the members of the gradually forming faculty had been discharged from the war service of the United States Government that it became possible for the University to open a preliminary session of the school in the fall of 1919. This preliminary session of the school was designed essentially to provide various sixteen-week courses for the benefit of many recently discharged medical officers of the United States Army and Navy.

The first regular session of the School began in October, 1920, upon a notably broad basis, made possible by the complete or partial coöperation of about fifty of Philadelphia's medical organizations in the general project.

It is from this notable beginning that the University has continued actively to develop its comprehensive plan of graduate medical education.

Educational Agencies: Briefly, the educational work of the Graduate School of Medicine is made possible by the facts that there exist in Philadelphia the factors essential to such a project; and that the University has been enabled to utilize enough of these factors in effective combination with its old and prominent medical school.

These Philadelphia factors are: The University, which initiates, fosters and guides this additional school; within the University, the large Central Organization of the Graduate School of Medicine which has graduate medical education as its sole business and domain; a great American metropolis with fine medical traditions, numerous hospitals, laboratories, libraries, clinics, clinicians, and active medical specialization, education and research.

The Central Organization consists of a large group of leading Philadelphia clinicians and medical educators, constituting the faculty of the Graduate School of Medicine; and of the former Medico-Chirurgical and Polyclinic institutions, which have abandoned their earlier types of medical education, and are now devoted wholly to the work of the Graduate School of Medicine. The relationships between this central organization and the other factors above mentioned arise mainly through the members of the Faculty of the Graduate School of Medicine in their further capacities as members of the staffs of the various medical organizations of the city: hospitals, clinics, laboratories, etc.

Students in the Graduate School of Medicine are suitably qualified physicians, who become, substantially, clinical or research assistants and understudies of the members of the Faculty in their public medical activities.

Courses: Regular courses are designed from the standpoint of three years of graduate medical work for those student physicians who pursue complete regular courses. Each registration is for graduate work in a single well-defined department of clinical specialization or medical science—seventeen distinct and separately organized departments being recognized.

The eleven major clinical departments under present arrangements are: Medicine and its specialties—Internal Medicine, Pediatrics, Neuropsychiatry, Dermatology-Syphilology, Radiology; Surgery and its specialties—Surgery, Gynecology-Obstetrics, Orthopedics, Urology, Ophthalmology, Otolaryngology.

The six major medical science departments under present arrangements are: Biochemistry, Anatomy, Physiology, Pathology, Bacteriology-Immunology, Pharmacology.

Broadly speaking, the keynote of the first year of a regular course is "theory;" of the second year, "practice;" and of the third year, "research." This division of work between the three years of a complete regular course neither is rigid nor intended so to be. Deviations must and do occur, according to the individual and to the department in which he labors; but the general spirit and purpose is to have the regular courses in all departments insure the inclusion, and so far as practicable, the sequence of "principles, applications, investigations."

A graduate school of medicine should be a center in which all of the newer special medical theories and methods are under active discussion, investigation and exemplification. High type medical men, each one within his own special field, seek such centers for the benefit of contact with this newer knowledge during brief or extended time periods according to the circumstances in each case.

The University provides for this important graduate medical educational service through "Personal Courses," each of which is offered by that member of its large faculty who is particularly well equipped within the special field concerned. These personal courses are not the so-called "Polyclinic" type of courses, which plays no part in the University's general plan. The personal courses deal with highly specialized sub-departmental topics. Some are designed for the benefit of physicians who are already classed as clinical or medical science specialists. Others are valuable to general practitioners who desire the benefit of intensive studies of various medical topics. The following personal courses are at present available: Tuberculosis, Clinical and Sociologic; Cardiology; Parasitology and Tropical Medicine; Gastroenterology; Protein Sensitization; Infant Feeding; Intubation; Clinical Psychiatry; Clinical Dermatology; Neuroanatomy and Neuropathology; Neuro-otology; Operative Surgery and Surgical Anatomy; Orthopedic Diagnosis; Operative Orthopedics; Ophthalmic Operations; Ocular Perimetry; Ocular Musculature; Ocular Refraction; Laryngoscopy; Bronchoscopy and Esophagoscopy; Otolaryngologic (Cadaver) Operations.

It is appropriate to note that prospects are good for beginning, in the fall of 1922, a series of University Extension Postgraduate Medical Courses, under the joint auspices of the Medical Society of the State of Pennsylvania and the Graduate School of Medicine of the University of Pennsylvania. The extension courses would carry postgraduate medical education directly to busy physicians in selected districts having hospitals suitable as loci for the conduct of such studies.

Certificates and Diplomas: Certificates and degrees are awarded only to successful regular course student physicians, and as follows:

A certificate stating the facts of registration, attendance, and the nature of the graduate work accomplished, is granted at the completion of the first year in a clinical department. It indicates satisfactory study of the principles underlying practice in a stated clinical specialty.

During his first year's course in a clinical department, the student physician is regarded as being engaged in a demonstration of his own fitness to become accepted as a degree candidate; and at the end of his first year, he is admitted, upon the recommendation of his departmental faculty, and upon his own request, to a definite graduate medical degree candidacy.

The degree of Master of Medical Science is conferred after the successful completion of a second year in a clinical department. It indicates a practical proficiency in the clinical department noted upon the diploma.

The degree of Doctor of Medical Science is granted to student physicians who have been productive in research, upon the completion of the third year of a regular course. It indicates demonstrated capacity for medical teaching and investigation in a stated clinical or medical science department.

Response: The pioneer efforts of the University of Pennsylvania to found a complete Graduate School of Medicine have met with widespread and hearty approval. The following items will serve for illustration.

During the brief period of its activities more than 400 medical men have matriculated as student physicians. These have come from practically every State in the Union and from eleven foreign countries—being graduates of more than 100 American and foreign medical schools.

Perhaps no one item could better illustrate the great demand for the right kind of graduate medical education than the fact that one hundred regular course student physicians now in the school are estimated to be investing a total of $500,000 in their year's course. This amount is deduced from the facts that they are largely mature and successful medical men who must lose their professional incomes while still subject to their ordinary expenses and to the extra expenses incident to their graduate studies. Under the circumstances, the estimate of an average investment of $5,000 per annum per student physician is conservative.

It is well known that the Carnegie Foundation has for many years been engaged in the problem of medical education; and that the efforts of the Foundation have played a large part in the great advance in this field. In the course of a recent expansive and scholarly address by Dr. Henry S. Pritchett, President of the Carnegie Foundation, upon the subject of medical education, he makes the following statement of the case: (See the *New York Medical Journal*, January 4, 1922, and the Sixteenth Annual Report of the Carnegie Foundation.)

"Medical education has discharged only a part of its legitimate function when it has taken the young candidate at the end of two years of college work and has offered him a four years' course culminating in the degree of Doctor of Medicine. This is all preliminary to the practical training he is to get as an interne in a hospital or as an assistant to some physician of experience and standing. In no respect has our medical education in the past fallen so far short of what is necessary, as in the opportunities offered to graduates in medicine to strengthen their knowledge either in general medicine or by training in some special branch of medical practice. Attempts to meet this demand have been made in various cities by postgraduate schools or polyclinics maintained usually by groups of physicians, oftentimes at great expense of time and even of money to themselves, but offering at best fragmentary and unsatisfactory facilities to the medical graduate. The experience of our medical officers in the great war brought to public knowledge, in startling and unexpected fashion, the enormous need of additional training for the men already in practice. A large proportion of medical practitioners were found to be in ignorance of the elementary tests and methods of modern medical science. The medical profession itself was startled at the situation revealed by the blaze of the great war.

"Not only is there great need for facilities in medical instruction for men already graduates in medicine, but these practitioners constitute the most fertile soil in which to plant the seeds of medical teaching. This pressing need cannot longer be neglected, nor can it be left to desultory opportunities and facilities of voluntary associations of physicians unsupported by community coöperation. The problem of graduate instruction must in the future take its place alongside the problem of the instruction of candidates for the medical degree. The two are not separate problems, they are parts of one problem. The school for the training of graduates ought to be a part of, and directly related to, the undergraduate medical school. The plan of the University of Pennsylvania to carry out this conception is a contribution of medical education. It undertakes to present in a single institution, not only the facilities of undergraduate instruction, but also the opportunity for the graduate student to obtain his training under conditions that shall recognize his needs and enable him to work in company with men of his own advancement rather than to take his chances of picking up what he desires in desultory courses or in the company of a mass of undergraduate students. The next decade must see a development of the graduate school in the larger medical centers, if the medical profession of this generation is to be put abreast of the state of medical science."

Coming from such a high authority as Dr. Pritchett, and in his official capacity, the above remarks are significant as to the importance not only of graduate medical education, but also of the part which the University of Pennsylvania is playing in its development.

A quotation from the *Pennsylvania Gazette* of November 25, 1921, is also to the point:

"Just how wonderful is the opportunity before the University of Pennsylvania to become the real center of postgraduate medical education in the United States may be realized from reading an editorial in a recent issue of the *Bulletin of the Fellowship of Medicine and Postgraduate Medical Association* of London in which the results already achieved by our own Graduate School of Medicine are hailed as an example of what medical men of London are attempting to do on the other side."

It should be a great source of satisfaction to the citizens of Pennsylvania and to its medical profession that the state is demonstrating a continued medical leadership by the epochal work which it is accomplishing in the difficult and important field of graduate medical education. G. H. Meeker, Dean.

THE WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA

The Woman's Medical College of Pennsylvania occupies a unique place, not only in this state but in this country, in the annals of medical education for women.

Founded in 1850, at a time when no other medical school would receive women students, the pioneer founders faced violent prejudice and active antagonism, and the early students and graduates endured many an insult in the pursuit of their profession.

The names of Dr. Bartholomew Fussell and Dr. Joseph Longshore are well known in connection with this early history, and Dr. Ann Preston, Dr. Emeline Cleveland, Dr. Mary Putman Jacobi, Dr. Hannah Croasdale, Dr. Anna E. Broomall are stirring names to all medical women.

Dr. Clara Swain, of one of the early classes, was the first woman to go forth to the Orient as a medical missionary, under the auspices of the Methodist Church, and a lengthening line of women physicians have followed her to various mission fields.

The College is a member of the Association of Americal Medical Colleges, and is ranked in Class A by the Council on Medical Education of the American Medical Association.

It is the continued purpose of the Corporation and Faculty to offer a course of medical study which shall meet the standards of the national and state accrediting organizations, and Boards of Medical Education and Licensure, preparing women for medical service as general practitioners rather than as specialists. Recognizing, however, that women and children will constitute, in major part, the patients of the woman physician, especial emphasis is laid upon preparation for service to this clientele, and unusually thorough courses with abundant clinical practice in gynecology and obstetrics are required of all students.

The Department of Hygiene is being developed to provide more comprehensive and thorough preparation for the position the general practitioner should take as the family health officer and teacher.

In the current development of public health work and health education, graduates of the College are taking prominent part, serving in State Departments of Health as Directors of Child Hygiene, and in many colleges and schools as health supervisors and teachers of hygiene.

The requirements for entrance to the College include two years of preparation in an accredited academic college, with specified units of credit in Physics, Biology and Chemistry. It is probable that three years of academic work will shortly be required.

The enrollment has increased steadily during the past several years, though classes are still small enough to allow of advantageous personal work with each student. One hundred and twenty-one students were enrolled in 1921-22 and announcement has been made that forty students in each class is the limit of capacity at present. Martha Tracy, Dean.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

ADAMS—James P. Dalbey, M.D., Gettysburg.
ALLEGHENY—Lester Hollander, M.D., Pittsburgh.
ARMSTRONG—Jay B. F. Wyant, M.D., Kittanning.
BEAVER—Fred B. Wilson, M.D., Beaver.
BEDFORD—N. A. Timmins, M.D., Bedford.
BERKS—Clara Shetter-Keiser, M.D., Reading.
BLAIR—James S. Taylor, M.D., Altoona.
BRADFORD—C. L. Stevens, M.D., Athens.
BUCKS—Anthony F. Myers, M.D., Blooming Glen.
BUTLER—L. Leo Doane, M.D., Butler.
CAMBRIA—Joseph J. Meyer, M.D., Johnstown.
CARBON—Jacob A. Trexler, M.D., Lehighton.
CENTER—James L. Siebert, M.D., Bellefonte.
CHESTER—Henry Pleasants, Jr., M.D., West Chester.
CLARION—Sylvester J. Lackey, M.D., Clarion.
CLEARFIELD—W. E. Reiley, M.D., Clearfield.
CLINTON—R. B. Watson, M.D., Lock Haven.
COLUMBIA—Luther B. Kline, M.D., Catawissa.
CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenbaugh, M.D., Carlisle.
DAUPHIN—Maude C. Exley, M.D., Harrisburg.
DELAWARE—George B. Sickel, M.D., Chester.
ELK—Samuel G. Logan, M.D., Ridgway.
ERIE—Fred E. Ross, M.D., Erie.
FAYETTE—George H. Hess, M.D., Uniontown.
FRANKLIN—John J. Coffman, M.D., Scotland.
GREENE—Thomas B. Hill, M.D., Waynesburg.
HUNTINGDON—John M. Keichline, Jr., M.D., Petersburg.
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JEFFERSON—W. A. Hill, M.D., Reynoldsville.
JUNIATA—Benjamin H. Ritter, M.D., McCoysville.
LACKAWANNA—Harry W. Albertson, M.D., Scranton.
LANCASTER—Walter D. Blankenship, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—John C. Bucher, M.D., Lebanon.
LEHIGH—Frederick R. Bausch, M.D., Allentown.
LUZERNE—C. L. Shafer, M.D., Kingston.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
MCKEAN—Francis DeCaria, M.D., Bradford.
MERCER—M. Edith MacBride, M.D., Sharon.
MIFFLIN—F. A. Rupp, M.D., Lewistown.
MONROE—Charles S. Flagler, M.D., Stroudsburg.
MONTGOMERY—John C. Simpson, M.D., Norristown.
MONTOUR—John H. Sandel, M.D., Danville.
NORTHAMPTON—Wm. A. Finady, M.D., Bethlehem.
NORTHUMBERLAND—Charles H. Swenk, M.D., Sunbury.
PERRY—Maurice I. Stein, M.D., New Bloomfield.
PHILADELPHIA—Mary A. Hipple, Philadelphia.
POTTER—Robert B. Knight, M.D., Coudersport.
SCHUYLKILL—George O. O. Santee, M.D., Cressona.
SNYDER—Percival J. Herman, M.D., Selinsgrove.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—Carl M. Bradford, M.D., Forksville.
SUSQUEHANNA—H. D. Washburn, M.D., Susquehanna.
TIOGA—John H. Doane, M.D., Mansfield.
UNION—Oliver W. H. Glover, M.D., Laurelton.
VENANGO—John F. Davis, M.D., Oil City.
WARREN—M. V. Ball, M.D., Warren.
WASHINGTON—Charles C. Cracraft, M.D., Claysville.
WAYNE—Edward O. Bang, M.D., South Canaan.
WESTMORELAND—W. J. Walker, M.D., Greensburg.
WYOMING—Herbert L. McKown, M.D., Tunkhannock.
YORK—Gibson Smith, M.D., York.

AUGUST, 1922

COUNTY SOCIETY REPORTS

DELAWARE—MAY

The regular meeting of the Delaware County Medical Society was held at Chester Hospital on May 11th. The Society was addressed by Dr. Claude P. Brown, of Philadelphia, his subject being "Pollenosis." His paper, in part, was as follows:

"The term 'Hay Fever' was used before any accurate description of the disease had been made and evidently was derived from the occurrence of the symptoms during haying time. Observations of the disease were made as early as the sixteenth century. In 1819 Bostock gave a complete detailed analysis of a periodical affection of the eye and chest, and later reported a number of cases.

"This condition was attributed by some to the heat of the summer, by others to the odors of flowering plants, and also to nervous conditions with odors acting as the exciting cause. Helmholz thought it might be due to bacteria. Among the reports collected by Phœbus, in 1859, was the suggestion that it was due to sweet vernal grass pollen. Kirkman at first disagreed with this, but about Christmas time found a sprig of sweet vernal grass in bloom in his hothouse and produced an attack by rubbing the flower in his hands and sniffing it.

"The real scientific investigations of the disease date from the observations of Blackley, who published his results in 1873. On one occasion, after the hay had been gathered at his home in Manchester and his attack had ceased, he went to the seacoast where the hay was still in bloom and experienced another attack. He was further convinced when one of his children brought a bunch of grass into the house from which a cloud of pollen was given off and symptoms were immediately produced. As he was much interested in botany, his curiosity was aroused as to whether this was confined to one or more of the natural orders and, if so, was it the pollen that produced the symptoms and was there any difference if it was dried or fresh from the plant. In order to determine these things he applied the pollen to the mucous membrane of the nose, and inhaled it so that it reached the larynx, trachea and bronchial tubes. He applied a decoction of it to the conjunctiva and applied moistened pollen to the scarified skin. In this way he studied the grasses and plants belonging to 35 natural orders, all of which produced symptoms. He also studied the various pollens microscopically.

"Dunbar, in 1903, carried Blackley's work one step farther by investigating the chemistry of pollens. He believed that by injecting these pollens into animals he could produce antitoxic sera. Curtis, in 1900, had used crude extract of pollen but with little practical results.

"Noon, in 1911, prepared an extract of these pollen which were given for the treatment of hay fever by subcutaneous injection, the dosage being guided by the ophthalmic reaction. His work was continued by Freeman.

"Brown and Hitchens reported their work at the Second Pan-American Scientific Congress in 1916, the work having been started in 1911. They studied the etiology with special reference to the administration of specific treatment. It is very important that an accurate diagnosis of the causative factor be made, if this is at all possible. However, in general it might be stated that seasonal attacks can be attributed to certain factors present during those seasons. Ragweed is almost entirely responsible for hay fever occurring during August and continuing until frost. A part of this work was done with extracts which were used intradermally and tablets of pure pollen, controlled with pure pollen. Our experience is that the pure pollens are the better.

"In our method of testing, the flexor surface of the forearm is cleansed with alcohol. Drops of water are placed on the arm, usually about an inch to an inch and a half apart. The skin is scarified through these drops, taking care that the scarification does not draw blood. Pollen is then mixed with water to form a paste, care being taken not to mix different pollens. The reaction usually begins to appear in 10 to 15 minutes, appearing almost immediately in very susceptible cases and in others being delayed.

"The first symptoms noted are a slight itching, with a diffuse redness and then the formation of a wheal at the site of scarification. The development of the wheal can be seen if the pollen is removed soon after the blush appears. The areola varies in size from one-half to as much as two inches, and the wheal varies in the same way. The wheal often presents prolongations, as if following lymphatics. Itching increases as the reaction develops and is quite pronounced by the time the wheal has reached its height. These reactions usually subside within an hour and soon disappear. There is always a very slight elevation of the skin at the point of scarification, but no areola or wheal is formed in a negative reaction. As these reactions subside soon, no dressing is necessary unless the patient is neurotic, in which case a boric acid compress relieves the patient's mind. When one sees the reaction following the application of pollen to the scarified skin it can readily be understood why the mucous membrane of the nose and throat and the conjunctiva become red and inflamed when the pollen is in the air.

"The work of Dunbar and his associates shows that the proteins from pollens can be extracted with either distilled water or saline solution. The watery extract is then precipitated with either acetone or alcohol. The precipitate is then dried and redissolved in saline solution. The extracts may be standardized by the method of Cooke, in which the protein nitrogen is the basis, or by the cutaneous and ophthalmic reactions used in the diagnosis of susceptibility, and the dose based on the extent of the reaction.

"The patients vary greatly in the amount which can be used, so that extremely small amounts should be used for the initial dose, subsequent doses being increased gradually as in other immunizing processes. The action of these pollen extracts is to stimulate the protective mechanism of the body. Individuals susceptible to these pollen proteins should be given amounts which will not produce untoward symptoms, but which will stimulate the cells to neutralize the proteins and produce an excess needed for their protection. Sometimes in treatment, injections are followed by a reaction of an anaphylactic nature. These vary greatly in severity."

Dr. Brown illustrated his paper by analyzing a series of cases treated by protein injections, showing the favorable results obtained in this method of treatment. His paper was much enjoyed by the Society.

Geo. B. Sickel, Reporter.

FRANKLIN—JUNE

The meeting of the Society for the month was held on the evening of the 20th, at the home of Dr. Samuel D. Shull, Chambersburg. Dr. H. M. Miley, the president, presided.

A letter from Dr. George A. Knowles was read, as well as a pamphlet, "The Position of the Medical Profession of Pennsylvania on Legislation; What We Favor and Oppose." Dr. B. F. Myers and others discussed the communication and Dr. Myers moved that this Society endorse the ideas of the Medical Legislative Conference in their efforts and purpose and that this expression be sent to the Secretary of the Medical Legislative Conference.

Dr. Frank N. Emmert, Chambersburg, was elected delegate, and Drs. Croft and White, alternates, to the State Medical Society.

Drs. Chas. F. Palmer, of Chambersburg, and T. H. Weagley, of Marion, Committee, individually spoke in eulogy of the life and death of Dr. David F. Unger, of Mercersburg, who died in the 2d instant. Resolutions were adopted and a copy directed to be sent to the family and to be offered for publication in the State Medical Journal.

"Radium and Its Indications" was discussed in quite an interesting way by Dr. Park A. Deckard. He spoke of the mortality from cancer and stated that there was a lessening of cases due to education of the people on the necessity of early attention. Radium will cure cancer in a malignant form if metastasis has not occurred. After the radium has done its work, then it is well to go after the glands in caring for a case. The subject was further discussed by Dr. Harvey F. Smith, of Harrisburg, who stated that it is advisable in using radium in women during the child-bearing period to use great caution. Premature menopause may be brought on. Four or five hours is a safe length of time for an exposure. There is some nausea in the first twenty-four hours. There is no conflict between surgery and the use of radium. Dr. Weagley spoke of the untoward effect when radium is used too often on the patient. Dr. Amberson in his observation stated that it seems to hurry the case on instead of curing it.

Dr. Swann moved that a vote of thanks be extended to the two speakers. This was carried by a standing vote.

A social hour with refreshments was enjoyed, and upon motion, by a rising vote the thanks of the members was accorded the hosts of the evening, Dr. and Mrs. Shull. John J. Coffman, Reporter.

MERCER—JULY

Dr. W. W. Richardson, of the Mercer Sanitarium, Mercer, and his staff entertained the members of the Mercer County Medical Society on Thursday, July 13th. A delicious luncheon was served in the beautiful grove at one o'clock, after which the Society adjourned to the living room in the main building, which was decorated with flowers.

There were 36 members present and the following guests: Dr. Lawrence Litchfield, of Pittsburgh, President-Elect of the Medical Society of the State of Pennsylvania; Dr. Sandy, Chief of Mental Health of the Public Welfare Department of the State of Pennsylvania, Harrisburg; Dr. Roberts, of Flint, Michigan, and Dr. Howe, Mercer.

Dr. Litchfield gave a talk on the postgraduate work offered to the medical societies by the Postgraduate School of Medicine of the University of Pennsylvania, and a committee was appointed to investigate the matter.

Dr. Edith MacBride was elected the delegate to the Scranton meeting of the State Medical Society in October. Her alternates are first, Dr. Paul T. Hope, Mercer, and second, Dr. Geo. W. Kennedy, Sharon. The District Censor is Dr. A. M. O'Brien, Sharon.

Dr. Sandy gave a very interesting address on "Mental Health," and Dr. Litchfield followed with an able talk in discussion of Dr. Sandy's paper. It was further discussed by Drs. O'Brien, R. M. Hope, Potter, Biggins and Brown.

Dr. Richardson and his staff were tendered a rising vote of thanks for their excellent entertainment, after which the Society adjourned to meet in September.

Edith MacBride, M.D., Secretary-Reporter.

WARREN—JUNE

On June 19th the Society met at the residence of Dr. Durham. Sixteen members were present. Dr. O. S. Brown was appointed District Censor and Drs. Ball and Mervine were appointed delegates.

Dr. Haines gave a summary of the present-day treatment of gonorrhea and its complications. He uses irrigations of various solutions, argyrol, permanganate, etc., which the patient applies at home, and these are supplemented by office treatment. In chronic cases irrigations of the posterior urethra are advisable and the infected glands are massaged over a carefully introduced sound.

The treatment of arthritis was outlined and the subject was discussed quite thoroughly. Some of the members believed that local treatment does little if any good. The use of internal antiseptics was recommended. Others held that plain dilution of the urine through drinking of plenty of water will cleanse the tract and that less complications are likely to occur than under local irrigations. Gonorrhea is more often treated by the patient himself or through some druggist than by the physician, and undoubtedly the majority of these cases recover, using some internal remedy only. The discussion proved quite interesting.

Dr. Briggs reviewed some of the recent ideas concerning infant feeding. He thought that most mothers could be trained to nurse their babies and the milk, if insufficient or not suitable, could be increased or changed by attention to the mother. In the discussion which followed it was brought out that, contrary to usual teaching, condensed milk is very valuable as an easily prepared food, and children thrive on it. Cane sugar or maltose produces less fermentation than milk sugar when used as an addition to milk.

Dr. Durham asked the members to adjourn to the Elks', where a substantial meal was prepared for them.

On June 28th, the members of Warren County Medical Society met at Bemus Point on Lake Chautauqua, with the members of Chautauqua, Catteraugus and Alleghany County Societies of New York. Warren sent 22, or 42 per cent of her membership, besides a number of the wives of members, and over 100 were present from the other societies. After a fine dinner in a room which overlooked the beautiful lake, the ladies were entertained by a special committee, and the physicians were addressed by Prof. Walter E. Dandy, of Johns Hopkins.

Dr. Dandy chose for his subject "The Early Recognition of Brain Tumors." He stated that brain tumors are third in frequency in the statistics of the hospital and a large percentage are cured by removal if seen early. They eventually result in death if not operated upon. The great point is: first, to suspect the tumor; second, to make an early diagnosis; third, to locate; fourth, to remove early. He spoke of the signs of suspicion—headache, vomiting, aphasia, choked disc, paralysis, gait disturbance, diplopia, convulsions, etc., with gradual increase of symptoms. In localizing the tumor the greatest help is to be obtained from what is termed "cerebral pneumography." The speaker explained this method and showed numerous lantern slides of x-ray pictures. The lateral and other ventricles of the brain are injected with air and then x-rayed. The air helps to outline the ventricles and the shadows determine whether there is obstruction to the free outflow from one ventricle to the other from pressure of a tumor, and the tumor mass is often seen clearly outlined against the ventricle.

The process is dangerous in inexperienced hands, but it has gradually been perfected so that in the speaker's experience no deaths in a recent series have occurred. Lumbar puncture in the presence of a brain tumor is dangerous, and as syphilitic disease does not often produce symptoms of brain tumor the spinal puncture as a means of diagnosis is not indicated.

Exploration and decompression are seldom of value. The eye ground and perimetry studies and the other measures outlined are usually sufficient to localize, and when localized, a goodly number can be removed surgically and the patient benefited.

Dr. Booth, President of the New York State Society, explained some legislation that was in contemplation, and also stated that a weekly medical journal would soon be published by the New York State Society.

It was recommended that the meeting which was so successful be followed by another one next year.

M. V. Ball, Reporter.

WESTMORELAND—JUNE

In a great get-together meeting, held under the auspices of the Westmoreland County Medical Society, and marked by the presence of a number of distinguished guests, more than 125 physicians of the county gathered in Greensburg, on June 23d, to attend a medical and surgical clinic, the first of the kind ever held by the society; while in the evening the physicians, with a number of guests, making 140 in all, enjoyed the annual banquet of the society, with the Latrobe Country Club as the scene.

Both the clinic and the banquet were outstanding events, reflecting the enterprise of the society, while the entire day was filled with pleasure and profit for the physicians, who not only derived the value of the information afforded through the clinic, but enjoyed each others' fellowship during the afternoon and evening.

The clinic, held at the Westmoreland Hospital, was conducted by Dr. Jos. Sailer and Dr. J. B. Carnett, both members of the faculty of the Medical School, University of Pennsylvania. The former, a specialist in internal medicine, considered three cases, while Dr. Carnett, a surgeon of note, presided at two surgical cases.

At the banquet in the evening, Dr. Sailer and Dr. Carnett were again on the program, the former speaking on "The Family Doctor," and the latter on "Ancient and Modern Surgery." In presenting them at the banquet, Dr. F. C. Katherman, the president of the County Society, and who was the toastmaster of the evening, took occasion to express to the two men the great appreciation of the members of the society for their presence, and for the clinic of the afternoon. Both of the guests, in responding to their toasts, gave splendid addresses, of interest to the laymen present as well as to the doctors.

Dr. Sailer described in an intensely interesting way the changes which time had brought in the profession of the doctor, while Dr. Carnett's description of the advance in surgery was equally informative and interesting.

The banquet was graced by the presence of James S. Moorhead, Esq., who in connection with the discussion of his subject, "The Medical Profession as an Economic Asset," gave, in his customary delightful way a little of the history of Westmoreland County, from the standpoint of its size, its resources, and its earlier days.

"Education, Medical and Other Kinds," was discussed by Thos. M. Whiteman, and Dr. William Taylor, of Irwin, brought the program to a close with an interesting talk on "Medical Fallacies."

During the evening, music was provided by H. Homer Dunn, David S. Ewing, R. W. Johnson and S. N. Osborne, with Maurice Showalter as the accompanist.

Among the distinguished guests present were Dr. Lawrence Litchfield, the President of the State Medical Society, together with Dr. Walter Donaldson, the State Secretary, and Dr. I. J. Moyer, the district councilor.

Physicians present from Pittsburgh included Dr. C. R. Jones, Dr. Brenneman and Dr. Theodore Diller.

Indiana was represented by Drs. Coe, Stewart, Torrence, Smith and Reed, while present from Connellsville were Drs. G. H. Gallagher, A. J. Coll and E. A. McCombs, and Uniontown was represented by nine members of the Fayette County Society.

Judge Charles D. Copeland was among the lay guests.

The banquet was managed by a committee consisting of Drs. Walter Bortz, Charles Taylor and Thos. St. Clair. Thos. St. Clair, M.D., Reporter.

PROPAGANDA FOR REFORM

Evans' Cancer Cure.—Dr. R. D. Evans, of Brandon, Manitoba, sells a "positive cure for cancer." The price is "one hundred dollars in advance." The victim who parts with $100.00 for this cruel and worthless fake is told to shave a patch about the size of a silver dollar on the crown of his head. The "cure" is applied to this spot. This is for the treatment of internal cancer. "For 'external cancer' the discovery is applied on the spot." From an analysis made in the A. M. A. Chemical Laboratory, it was evident that Evans' Cancer Cure is essentially a mixture of 1 part of a fatty substance (such as lard) and 5 parts of dried ferrous sulphate (*Jour. A. M. A.*, June 3, 1922, p. 1739).

More Misbranded Nostrums.—The following products have been the subject of persecution by the Federal authorities, charged with the enforcement of the Food and Drugs Act:

Beil's New Nerve Tablets (Beil Mfg. Co.), consisting essentially of aloin, zinc phosphid, nux vomica extractives, resin, a laxative plant drug, magnesium and iron salts.

Diemer's Prescription for Gonorrhea and Gleet (Dr. F. W. Diemer Medicine Co.), consisting of pills which contain Epsom salt, calcium sulphid, ferrous sulphate and oil of cubebs, and tablets for external use, containing boric acid, zinc sulphate and hydrastin.

Diemer's Dyspepsia Tablets (Dr. F. W. Diemer Medicine Co.), consisting chiefly of baking soda, a laxative drug and ipecac alkaloids.

Diemer's Hot Toddy (Dr. F. W. Diemer Medicine Co.), tablets containing milk sugar, baking soda, a laxative plant drug and small amounts of ginger and red pepper.

Diemer's Kidney and Bladder Tablets (Dr. F. W. Diemer Medicine Co.), consisting chiefly of baking soda, saltpeter and a laxative plant drug.

Diemer's Treatment for Piles (Dr. F. W. Diemer Medicine Co.), suppositories containing cacao butter, borax, alum and tannin-bearing plant material.

Diemer's Antiseptic Female Suppositories (Dr. F. W. Diemer Medicine Co.), suppositories containing borax, alum and tannin-bearing plant material.

Diemer's Rheumatic Remedy (Dr. F. W. Diemer Medicine Co.), containing chiefly acetanilid, baking soda and a laxative plant drug.

Diemer's Pennyroyal and Tansy Compound (Dr. F. W. Diemer Medicine Co.), tablets containing chiefly plant material, including aloes and red pepper, with saltpeter and sand.

Diemer's Preparation for Specific Blood Poison (Dr. F. W. Diemer Medicine Co.), containing, chiefly, calcium carbonate, ferric oxid, potassium iodid and small amounts of arsenic and mercury.

Diemer's Laxative Grip-Malarine (Dr. F. W. Diemer Medicine Co.), consisting of acetanilid, baking soda, aloes and red pepper.

Manhood Tablets (Hollander-Koshland Co.), containing damiana, strychnin and zinc phosphid.

Patten's Lightning Salve (John H. Patten), consisting of camphor, turpentine, soap, rosin, tallow, beeswax and petrolatum (*Jour. A. M. A.*, June 3, 1922, p. 1740).

Salicylates "Natural" and "Synthetic."—The Wm. S. Merrell Company rehashed the definitely refuted claim that "synthetic" salicylic acid is inferior to the "natural" kind. The Merrell Company suggests that, to avoid the effects of synthetic salicylic acid, physicians should specify "natural" and "Merrell" in writing prescriptions for sodium salicylate or any of the other salicylates. About ten years ago, the Council on Pharmacy and Chemistry instituted a thorough investigation of the asserted superiority of natural salicylic acid and salicylates over the ordinary or synthetic kind. This investigation afforded conclusive proof that the claim—based on a mixture of mysticism, commercial exploitation, misinterpretation and tradition—is without foundation. Nevertheless, the Merrell Company attempts to induce the medical profession to perpetuate this exploded fallacy and to specify the Merrell product, which costs twenty-four times as much as the synthetic sodium salicylate of U. S. P. quality (*Jour. A. M. A.*, June 3, 1922, p. 1742).

The Intravenous Use of Acacia.—It is now generally accepted that acacia has a limited and uncertain usefulness. The intravenous use of acacia is a recent therapeutic procedure and apparently sufficient time has not elapsed for the thorough appraisal of its use as a therapeutic remedy. Bearing in mind the accidents from the use of acacia that have been reported, the lack of agreement as to its beneficial effects, among surgeons who have tried it, the experimental evidence that has been reported as to its deleterious effects and the paucity of data indicating its clinical usefulness, conservative practitioners will still withhold their verdict. Moreover, the questions of intravenous therapy, which are involved in any discussion on the use of acacia in shock, hemorrhage and allied conditions, are an important and serious complicating consideration (*Jour. A. M. A.*, June 17, 1922, p. 1897).

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Seventy-second Annual Session of the Medical Society of the State of Pennsylvania

Scranton, October 2-5, 1922

PRELIMINARY SCIENTIFIC PROGRAM

GENERAL MEETING.

ARMORY: ROOM A.

Tuesday, October 3, 1922, 10 A. M.

Call to Order by the President.
FRANK G. HARTMAN, Lancaster.
Invocation.
Address of Welcome.
HON. JOHN F. DURKAN, Mayor of the City of Scranton.
Address of Welcome.
JAMES D. LEWIS, President, Lackawanna County Medical Society.
Presentation of Program.
THOMAS G. SIMONTON, Pittsburgh, Chairman of the Committee on Scientific Work.
Announcement of Entertainments.
MARTIN T. O'MALLEY, Chairman of the Local Committee on Arrangements.
Introduction of Delegates from Other Societies.
Installation of the President-Elect.

Stenographer—MR. JAMES M. LINGLE, 1420 Chestnut St., Philadelphia.

(Note—Essayists will please deposit *original* copies of their papers with the Secretary of the Section, when they have finished reading them. The printer will not accept *carbon* copies.)

No. 1.
President's Address.
LAWRENCE LITCHFIELD, Pittsburgh.

No. 2.
Concerning University Extension Postgraduate Work. (15 minutes.)
GEORGE H. MEEKER, Dean of the University of Pennsylvania, Graduate School of Medicine, Philadelphia.
Discussion opened by GEORGE E. DESCHWEINITZ, Philadelphia; DANIEL A. WEBB, Scranton; and WALTER F. DONALDSON, Pittsburgh.

No. 3.
Address. (By invitation of the Board of Trustees.) (20 minutes.)
FRANK BILLINGS, Chicago, Resident Trustee, American Medical Association.

Wednesday, October 4, 9 A. M.

No. 4.
The Relation of the Mental Hospital to the Community. (10 minutes.)
J. ALLEN JACKSON, Supt., and HORACE V. PIKE, Clinical and Community Director, of the State Hospital for the Insane, Danville, Pa.

OUTLINE. A mental hospital should be one of the medical centers of a community, having supervision of the mental health of those individuals residing in its hospital district. It should be equipped and manned to meet the community needs as relates to its hospital function. Its purpose should be to promote restoration of the patient, or arrest of the disease and supervision of his readjustment in the community. It should make comfortable that group of patients whose disease necessitates life treatment. The hospital should bear a very close relation to the physicians in the community and should make possible for these physicians consultation with the trained phychiatrists on its staff. It should likewise give to the physicians, by means of didactic and bedside clinics, such knowledge as it gains. In fact, it should serve as a postgraduate center for the physicians residing in its district. The hospital, through its mental clinics, should serve the community in solving such problems as may arise in the schools, courts and homes as a result of conflicts between mental defectives, the insane and the community. It should stand ready to advise as to the proper legislative measures, which will aid in the prevention of mental disorders, and advance successful treatment of mental diseases.

Discussion opened by THEODORE DILLER, Pittsburgh.

SYMPOSIUM: BONES AND JOINTS.

No. 5.
Tuberculosis of the Bones and Joints. (Lantern demonstration. 15 minutes.)
DE FOREST WILLARD, Philadelphia.

OUTLINE. Diagnostic signs of surgical tuberculosis in the predeformity stage. Various results following early and late diagnoses. Brief outline of the various methods of treatment, especially of the more recent additions to treatment.

No. 6.
Syphilis of the Bones and Joints. (Lantern demonstration.) (15 minutes.)
B. FRANKLIN BUZBY, Philadelphia.

OUTLINE. Historical references. Possible cause of predilection. Symptoms—pain not proportionate to pathology; tenderness almost constant. Location of lesions. Histology—frequency of congenital syphilis, causing osteochondritis and arthritis. Periostitis in secondary syphilis. Deep and superficial gummata of tertiary stage. Charcot joint—due both to nervous and bony change. Diagnosis—value of therapeutic test; Wassermann essential in all bone and joint lesions; value of x-ray in differentiation. Treatment. Prognosis.

Discussion of papers No. 5 and 6 opened by J. TORRANCE RUGH, GEORGE M. DORRANCE, Philadelphia, and JAMES O. WALLACE, Pittsburgh.

No. 7.
Anthrax. (10 minutes.)
FREDERICK B. UTLEY, Pittsburgh.

OUTLINE. Brief history, symptoms, diagnosis, treatment. Report of case showing malignant pustule, intestinal anthrax and anthrax meningitis with complete autopsy report. Recovery of stock of infected shaving brushes. Suggestions for sterilization of hair and bristles used in manufacture of all brushes, hair, tooth and shaving, and suggestions for prophylaxis.

Discussion opened by ALBERT J. BRUECKEN, Pittsburgh.

OBSTETRICAL SYMPOSIUM.

No. 8.
Present Standards of Obstetrical Practice in Rural Pennsylvania. (10 minutes.)
CLOYD G. BRUMBAUGH, Huntingdon.

OUTLINE. A plea for better prenatal care and obstetrical diagnosis by the general practitioner, and for the development of efficient obstetrical divisions in the small hospitals.

No. 9.
The More Important Obstetrical Emergencies Met by the General Practitioner. (15 minutes.)
G. VICTOR JANVIER, Lansdowne.

Outline. (1) Necessity of knowing the indications for cesarean section before operation. (2) Malpresentations. (3) Hemorrhage. (4) Prolapse of cord. (5) Rupture of uterus: (a) Spontaneous; (b) During labor. (6) Ectopic gestation becoming more common. It must be recognized early.

No. 10.

Indications For, and Technique of Cesarean Section Illustrated by Moving Pictures. (20 minutes.)
John Cook Hirst, Philadelphia.

Discussion of papers Nos. 8, 9, and 10 opened by George M. Boyd, Douglas Murphy, Philadelphia, Samuel J. Waterworth, Clearfield, and Raleigh R. Huggins, Pittsburgh.

Thursday, October 5, 2 P. M.

No. 11.

State Control of

- (a) Syphilis. (5 minutes.)
  S. Leon Gans, State Department of Health, Harrisburg.
- (b) Diphtheria. (5 minutes.)
  J. Bruce McCreary, State Department of Health, Harrisburg.
- (c) Puerperal Sepsis. (5 minutes.)
  Edmund B. Piper, Philadelphia.

Discussion of papers Nos. a, b and c opened by William R. Nicholson, Philadelphia, and Harold Miller, Pittsburgh.

No. 12.

Epigastric Angina. (10 minutes.)
Reed Burns, Scranton.

Outline. (1) The symptoms are the same as in angina pectoris, except the location of the pain, which is most intense in the epigastrium. (2) The cause of the pain and the reason why it is epigastric. (3) It occurs under three conditions: 1st, degeneration of heart muscles; 2nd, overstrain; 3rd, sedentary habit. (4) Why the attacks occur so often at night, during sleep, in the recumbent posture, while they are avoided by rest during waking hours. (5) Differential diagnosis, its importance to both physician and surgeon. (6) A few points as to treatment.

Discussion opened by Arthur C. Morgan, Philadelphia, and J. Norman White, Scranton.

No. 13.

Differential Diagnosis of Exanthemata. (15 minutes.)
Frank H. Rimer, Municipal Hospital, Pittsburgh.

Outline. Differential diagnosis of measles, german measles, scarlet fever, chicken-pox, and small-pox, with regard to the symptoms at onset, pre-eruptive stages, topography and character of eruptions, complications, and intercurrent diseases in the order of their frequency.

Discussion opened by Samuel S. Woody, Municipal Hospital, Philadelphia.

No. 14.

Differential Diagnosis of Some Parasitic Skin Diseases. (15 minutes.)
William Guy and Frederick Jacob, Pittsburgh.

Outline. Frequency of the condition and the seeming greater frequency due to present day knowledge of cause. Hands and feet as seats of very frequent inflammation of this type. Methods of diagnosis and difficulties encountered.

Discussion opened by Frank C. Knowles, Philadelphia.

SYMPOSIUM: BRAIN TUMOR.

No. 15.

Diagnosis. (15 minutes.)
William G. Spiller, Philadelphia.

No. 16

Method of Approach. (20 minutes.)
Walter D. Dandy, Baltimore, Md. (By invitation.)

Discussion of papers No. 15 and 16 opened by J. Stewart Rodman and George P. Muller, Philadelphia.

SECTION ON MEDICINE.

ARMORY: ROOM B.

Officers of Section.

Chairman—Edward J. G. Beardsley, 258 S. Sixteenth St., Philadelphia.

Secretary—Adam J. Simpson, 401 E. Twelfth St., Chester.

Executive Committee—George E. Holtzapple, York; M. Howard Fussell,* Philadelphia; Howard G. Schleiter, Pittsburgh.

Stenographer—Mr. James M. Lingle, 1420 Chestnut St., Philadelphia.

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Tuesday, October 3, 2 P. M.

No. 1.

Address by the Chairman. (5 minutes.)
Edward J. G. Beardsley, Philadelphia.

No. 2.

General Practice, Its Boundaries. (10 minutes.)
Josephus T. Ullom, Gtn., Philadelphia.

Outline. The work of the general practitioner studied qualitatively and quantitatively. What should be treated and what should be referred. The attractions of general practice. The training advisable for one entering general practice. The postgraduate work desirable. The desirability of the general practitioner having a hobby.

Discussion opened by Charles H. Miner, Wilkes-Barre.

No. 3.

Methods of Physical and Functional Diagnosis Available to the General Practitioner. (20 minutes.)
Frank Billings, Chicago. (By invitation.)

Outline. An attempt will be made to show that some of the very useful, but highly technical modern methods of physical and functional diagnosis, which are available at the present time to comparatively few of the medical profession, may be made available, by practical modifications, to the general practitioner.

No. 4.

The Differential White Blood Cell Count as an Aid in Diagnosis and Prognosis in Pernicious Anemia. (10 minutes.)
Frank A. Evans, Pittsburgh.

Outline.—It is unwise to give blood transfusions unnecessarily, for the number of transfusions one patient may take is limited. If a remission is imminent or in progress a blood transfusion is not necessary. Therefore, if remissions in pernicious anemia could be predicted, it would be helpful to those who use blood transfusions in the treatment of this disease. The level of antihemolytic power of the blood serum increases some time before a remission occurs; it may precede improvement in the blood picture by as much as one week. The technique for the quantitative estimation of the antihemolytic power of the serum is too elaborate for a clinical method. The absolute number of polymorphonuclear leukocytes rises and falls with the level of the antihemolytic power of the serum. This, therefore, it a help in determining, before other changes in the blood occur, whether or not a remission is to be expected. Cases illustrating this point.

Discussion opened by George B. Sickel, Chester.

No. 5.

Treatment of Pernicious Anemia. (10 minutes.)
Alexander H. Colwell, Pittsburgh.

Outline. The value of repeated small transfusions of human blood. Report of cases treated with small transfusions of citrated blood in amounts of from 20 to 50 cc.

Discussion opened by John A. Lichty, Pittsburgh.

No. 6.

The Importance of Fluid Intake in the Treatment of Kidney Insufficiency.
O. H. Perry Pepper, Philadelphia.

Outline. Relation of fluid output to output of solids in the normal. Limits of concentration of solids by the normal kidney. Influence of renal disease on the concentrating power of the kidney. Significance of these facts in diagnosis and prognosis. Application of these principles to the treatment of various types of nephritis.

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*Deceased.

Discussion opened by Roy R. Snowden, Pittsburgh.

No. 7.

A Physiological Consideration of Nephritis. (10 minutes.

George A. Clark, Scranton.

Outline. Nephritic conditions considered under the following headings: Mechanical nephritis, acute involvement, such as colds, toxemias and broken compensation. Examples of cases. Latent nephritis, found in routine examinations, caused by childhood diseases, chronic toxemias, etc. Examples. Mechanical metabolic; chronic nephritic conditions with increased blood findings. Examples. All cases presented will have the Mosenthal fractional examination, phenolphthalein and blood chemistry.

Discussion opened by Harold W. Jones and Edward Weiss, Philadelphia.

Wednesday, October 4, 2 P. M.

Report of Executive Committee.
Election of Section Officers.

No. 8.

Report of a Case of Epidural Abscess of the Spinal Canal.

Edgar M. Green, Easton.

Outline. Various disorders of the spinal cord may present a clinical picture of transverse myelitis. These affections may be subdivided into three classes: (1) Intramedullary, (2) Meningeal, (3) Extrameningeal. The extrameningeal may be caused by disease of the vertebrae. The case reported is from the last subdivision. Abscess was caused by inflammation of a rib. Pus dissected its way to the spinal column and made pressure upon the dura.

Discussion opened by Nathaniel W. Winkelman, Philadelphia.

No. 9.

Myoclonic Attacks and Their Significance. (10 minutes.)

Edward E. Mayer, Pittsburgh.

Outline. Distinction between myoclonus and other manifestations of hyperkinesis. Diseases in which myoclonic attacks are found. An attempt at their interpretation. Illustrative cases.

Discussion opened by Cornelius C. Wholey, Pittsburgh.

No. 10.

The Management of Mental Cases by the General Practitioner. (10 minutes.)

Theodore H. Weisenburg, Philadelphia.

Outline. It is necessary to recognize early mental symptoms and differentiate them from other affections. Threats of suicide in mildly depressed patients should never be taken lightly. In every instance mental symptoms should be investigated and causes eliminated if possible. Discussion of the rôle played by focal infections in the etiology of insanity. The management and treatment of different types of insanity.

Discussion opened by J. Allen Jackson, Danville.

No. 11.

Prognosis in Myocardial Disease. (20 minutes.)

Bernard S. Oppenheimer, New York. (By invitation.)

No. 12.

Arterial Hypertension, Etiological Factors. (10 minutes.)

Joseph Barach, Pittsburgh.

Outline. Arterial hypertension is not a spontaneous disease. There are three influential factors in its production. These begin in early life, continue throughout middle life and produce hypertension from that time onward. The diagnosis of essential vascular hypertension stands until organic inferiority manifests itself as a decompensation involving brain, heart or kidney.

Discussion opened by Ralph Pemberton, Philadelphia.

No. 13.

Clinical Determination of Heart Size. (10 minutes.)

John W. Boyce, Pittsburgh.

Outline. Cardiac percussion essentially inaccurate and misleading. Routine roentgenology practical and reliable. Small changes in cardiac silhouette, accurately determined are of great clinical value. Consideration of undersized heart; of Scott's changes in position of left border. X-ray diagnosis of mitral stenosis; of functional murmurs. Gauging severity of valve lesion by amount of enlargement at the time of perfect compensation. Recognition of minor failures of compensation by haze due to passive congestion of lung.

Discussion opened by S. Calvin Smith, Philadelphia.

Thursday, October 5, 9 A. M.

No. 14.

Differential Diagnosis of Diseases of the Pancreas. (10 minutes.)

George E. Holtzapple, York.

Outline. The diagnosis of diseases of the pancreas is often difficult and uncertain. There is no pathognomonic symptom or sign. It is the correlation of the syndrome and the analysis of each and every individual symptom that will enable one to make a diagnosis.

Discussion opened by Elmer, H. Funk, Philadelphia.

No. 15.

The Present Status of Endocrine Therapy. (10 minutes.)

Benson A. Cohoe, Pittsburgh.

Outline. The official preparations of the endocrine glands. The need of standardization. Glandular products: (1) Of demonstrated therapeutic value, thyroid, parathyroid, suprarenal, pituitary, corpus lutem; (2) Of certain therapeutic action, thymus, mammary, ovary, testicle, pineal. Indications for the use of endocrine products. Pluriglandular mixtures. The indiscriminate use of these products tends to bring endocrinology into disrepute and is to be deprecated.

Discussion opened by Lawrence Litchfield, Pittsburgh.

No. 16.

Some Practical Points in Diagnosis and Treatment. (10 minutes.)

Hobart A. Hare, Philadelphia.

Outline. The importance of diastolic blood pressures. The high blood pressure of aortic regurgitation and the factors which influence it. The relative importance of urinary specific gravity to blood pressure in albuminuria.

Discussion opened by Frank Alleman, Lancaster.

No. 17.

Anthracosis. Henry R. M. Landis, Philadelphia.

Outline.

Discussion opened by Robert A. Keilty, Danville.

No. 18.

The Clinical Aspect of Primary Cancer of the Lung. (10 minutes.)

William W. G. Maclachlan, Pittsburgh.

Outline. The paper deals with four cases which were studied during the last year, pointing out the chief clinical symptoms and signs that were present in these cases. Emphasis is laid upon the problem of diagnosis and our general conception of the incidence of this disease. Brief discussion of the pathology.

Discussion opened by George Morris Piersol, Philadelphia.

No. 19.

Pulmonary Tuberculosis and Appendicitis. (10 minutes.)

Alexander Armstrong, White Haven.

Outline. Calling attention to the fact that appendicitis is often tuberculous and it is usually secondary to disease in the lungs. Urging that the operation should be done under local anesthesia. Citing the evil effects of ether on both dormant and active lung lesions. A plea for a careful physical examination of the chest before the operation to detect a possible tuberculous focus. Urging a protected convalescence after a tuberculous appendix is removed.

Discussion opened by Howard G. Schleiter, Pittsburgh.

No. 20.

The Value of Test Meal Studies. (10 minutes.)

Trauman G. Schnabel, Philadelphia.

Outline. The development of test meal study is recalled. The varying types of test meals and methods of study are enumerated, with the object to be sought for in each one. Normal findings are given, with results to be looked for in pathological conditions. The possibilities of accurate diagnosis are presented by citing a series of patients checked up by operation or x-ray study. A plea is made for the value of simple test meal study as a preliminary procedure to any thought of x-ray investigation.

Discussion opened by J. Quicy Thomas, Norristown.

SECTION ON SURGERY.

ARMORY: ROOM C.

Officers of Section.

Chairman—**Alfred C. Wood**, 2035 Walunt St., Philadelphia.

Secretary—**George M. Dorrance**, 2025 Walnut St., Philadelphia.

Executive Committee—**Donald Guthrie**, Sayre; **T. Turner Thomas**, Philadelphia; **Elwood N. Kirby**, Philadelphia.

Stenographer—**Mrs. M. C. Repp**, 926 S. Sixtieth St., Philadelphia.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept *carbon* copies.)

(Unless otherwise noted, all papers will be limited to fifteen minutes.)

Tuesday, October 3, 2 P. M.

No. 1.

Address by Chairman.

Alfred C. Wood, Philadelphia.

No. 2.

Perirenal Cyst. Double Pyelitis.

William H. Glynn, Pittsburgh.

Outline. Perirenal cyst; condition comparatively rare. Classification. Symptoms. Difficulty of diagnosis. Prognosis. Treatment. Presentation of case and specimen. Double pyelitis complicating pregnancy. Etiology. Bacteriology. Exogenous causes. Treatment of kidney. Advisability of emptying uterus. Methods. Case history with treatment.

Discussion opened by **Stephen E. Tracy**, Philadelphia.

No. 3.

Empyema. **Ellis C. Winters**, Ford City.

Outline. Etiology. Diagnosis and Treatment.

Discussion opened by **T. Turner Thomas** and **Levi Hammond**, Philadelphia.

No. 4.

The Etiology of Postoperative Insanities.

Daniel J. McCarthy, Philadelphia.

Outline. Necessity for a careful study of the patient before operation, not only for evidence of organic nervous disease but for heart and kidney efficiency, and more particularly in patients with a bad heredity, a comparative study of heart and kidney efficiency with careful blood-pressure studies essential to a proper diagnosis and prognosis. This refers to the cardiorenal group. This is of equal importance in the prostatic group. Operation of the sexual organs and the type of mental disturbance. The influence of mixed infections, more particularly the streptococcic group, in producing mental derangement. Operations during adolescence should be preceded by a study of the personality in order to exclude a latent psychosis which may develop into a precox or mania immediately following the operation Prognosis and treatment of the postoperative psychoses.

Discussion opened by **John L. Atlee**, Lancaster, and **Joseph Sailer**, Philadelphia.

No. 5.

Cancer of the Tongue.

William L. Clarke, Philadelphia.

Outline. After trial of other methods, the choice of treatments is now the local destruction of the neoplasm by electrocoagulation, and the application of radium over the lymphatic drainage area. The x-rays are sometimes used as a supplementary measure.

Discussion opened by **George E. Pfahler** and **Alfred S. Doyle**, Philadelphia.

No. 6.

Spinal Anesthesia. A Study of About 15,000 Inductions. (10 minutes.)

W. Wayne Babcock, Philadelphia.

Outline. Physiologic action. Conditions modifying the effects produced. Specific gravity. Position of the patient. Dosage. Per cent. Solution of drug employed. Bulk of fluid withdrawn and injected. Force of injection. Advantage of method. Selection of patients. Disadvantages of method. Mortality. Immediate and secondary untoward effects. Antidotes. Summary.

Discussion opened by **William A. Steel**, **Hubley A. Owen**, **Leon Brinkman** and **J. Ralston Wells**, Philadelphia.

Wednesday, October 4, 2 P. M.

Report of Executive Committee.

Election of Section Officers.

No. 7.

Demonstration of Basal Metabolism Apparatus. (10 minutes.)

Carl E. Ervin, Danville, and **Stanley Conklin**, Sayre.

No. 8.

Adenomatous Goiter. Dry Clinic. Demonstration of Actual Patients. Treatment Advised. (10 minutes.)

Charles B. Noecker, Scranton.

No. 9.

Exophthalmic Goiter. Dry Clinic. Treatment Advised. (10 minutes)

Lawrence A. Sheridan, Wilkes-Barre.

No. 10.

Colloid Goiter. Dry Clinic. Treatment Advised. (10 minutes.)

Michael J. Noone, Scranton.

No. 11.

Etiology and Prevention of Simple Goiter. (15 minutes.)

David Marine, New York City.

Discussion opened by **Lawrence Litchfield**, Pittsburgh, and **Henry D. Jump**, Philadelphia.

No. 12.

What Types of Goiter Should Receive Medical Treatment?

Donald Guthrie, Sayre.

Outline. Classification of goiter. Treatment of the adolescent goiter. Treatment of the colloid goiter. Nontoxic adenoma. Exophthalmic goiter. Value of metabolism test as a check during medical treatment. Temporary improvements not to be mistaken for permanent cures in toxic cases. Conclusions.

No. 13.

Surgical Treatment of Goiter.

Harold L. Foss, Danville.

Outline. Present conceptions of etiology of goiter. Endemic goiter in Pennsylvania. Is there a true prophylaxis? Recent theories of hypothyroidism in the adenomatous form. The hyperfunctionating adenoma. Basal metabolism and other laboratory diagnostic means. The menace of untreated goiter. Multiplicity of treatments in vogue.

Review of work on the thyroid at the Geisinger Memorial Hospital during the past seven years. The present status of surgery in the relief of goiter.

No. 14.

X-ray and Radium Treatment of Goiter.

George W. Grier, Pittsburgh.

Outline. Classification. Selection of best treatment. Method of carrying out treatment. Choice of x-ray or radium. When to stop treatment. When to advise surgical intervention. Results.

Discussion of papers No. 12, 13 and 14 opened by **Jonathan Biddle**, Fountain Springs; **Samuel J. Waterworth**, Clearfield; **Lloyd G. Cole**, Blossburg; **George E. Pfahler**, **Charles H. Frazier**, **William S. Newcomet** and **William H. Schmidt**, Philadelphia; **Jonathan M. Wainwright**, Scranton.

Thursday, October 5, 9 A. M.

No. 15.

The Longevity of Plates and Other Foreign Bodies in the Treatment of Fractures of Long Bones.

Moses Behrend, Philadelphia.

Outline. There is a wide field of usefulness for the employment of metal plates, nails and other foreign bodies for the treatment of fractures. The selection of material for the approximation of fragments is important. These substances may remain for years without causing irritation; same may never have to be removed, while others must be removed soon after union is complete. Conservation must be the keynote in the treatment of fractures. In all operations on bones, whether we use metal appliances or bone grafts, the "no contact" method must be strictly enforced. (Lantern demonstration.)

Discussion opened by W. Estell Lee, Philadelphia.

No. 16.

Chemical Dyes in the Treatment of Gonorrhea in Women and Children.

John A. McGlinn, Philadelphia.

Outline. The bacteriologic properties of chemical dyes. The use of gentian violet and violet green in the treatment of gonorrhea; the results in acute gonorrhea in adults; the results of vulva-vaginal gonorrhea in children. Technique of the application of the dyes.

Discussion opened by Hersey Thomas, Philadelphia.

No. 17.

Fractures Near the Ankle.

William L. Estes, Jr., Bethlehem.

Outline. Classification based on: Etiology. Direction of fracturing force. Abduction. Adduction and flexion and extension fractures. Extent and type of fractures dependent on severity and duration of fracturing force. Adduction and external rotation lesions. (1) Frequency of fracture of posterior margin of tibia. (2) Report of an isolated fracture of the posterior margin of the tibia.

Discussion opened by Charles Mitchell, W. Estell Lee and Eugene C. Murphy, Philadelphia.

No. 18.

Technique of Prostatectomy.

Acheson Stewart, Pittsburgh.

Outline.

Discussion opened by Benjamin A. Thomas, Alexander Randall, Thomas C. Stellwagen and Leon Herman, Philadelphia.

No. 19.

Peritonitis Following Operations for Cholecystitis of Influenzal Origin. (10 minutes.)

Bender Z. Cashman, Pittsburgh.

Outline. Report of two cases of rapidly fatal peritonitis following cholecystectomy for chronic cholecystitis, the symptoms of which date from attacks of influenza. Discussion of the possibility of latent microbism. Analogy in pelvic infections and in the wounds during the late war. Importance of careful bacteriological examination of tissues removed at operation to determine this point. Important points in the clinical history, especially with reference to patient's general health since onset of gall-bladder symptoms.

Discussion opened by Edward A. Weiss, Pittsburgh.

No. 20.

The Treatment of Cerebrospinal Syphilis by Lumbar Puncture, Following Intravaneous Administration of Neoarsphenamin. Report of Case. (10 minutes.)

Henry Pleasant, Jr., West Chester.

Outline. Review of work done along the lines of treatment of syphilis. Are "Wassermann-fast" cases in reality cases which have not been treated by appropriate methods? Various preparations of salvarsan tried. Case report: Patient, age 30, machinist, married, contracted syphilis shortly after marriage. Case treated at large clinic immediately after appearance of secondary rash. Wassermann very strongly positive. Headache began almost immediately after the secondary rash appeared. Headache was at first somewhat relieved by neosalvarsan or some similar preparation, but later the headaches became very severe. Wassermann became negative. Sixty intravenous treatments failed to relieve symptoms. Lumbar puncture showed enormous increase in cell count with strongly positive Wassermann. Repeated lumbar punctures failed to relieve headaches, although cell count reduced. Mercury and iodides had no effect. Lumbar puncture preceded by intravenous administration of neoarsphenamin had the immediate effect of relieving the headaches. Spinal Wassermann became negative and cell count normal. Chart of spinal cell count and treatment. Subsequent history. Patient entirely recovered. No symptoms within one year afterwards. Wife delivered of normal male baby. Wassermann of wife negative. Placenta normal. No stigmata noted so far.

Discussion opened by Theodore H. Weisenberg, Philadelphia.

No. 21.

The Importance of Physical Factors in the Prognosis of Renal Infections. (10 minutes.) (Lantern demonstration.)

Leon Herman, Philadelphia.

Outline. Methods used to determine type of cases amenable to different varieties of treatment. Why certain renal infections can be cured by local treatment alone and why others can not. Methods of treatment considered briefly. Illustrative cases and pyelograms. (Lantern slide demonstrations.)

Discussion opened by John B. Lownes, and Thomas C. Stellwagen, Philadelphia.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

ARMORY: ROOM D.

Officers of Section.

Chairman—George M. Coates, 1811 Spruce St., Philadelphia.

Secretary—William Hardin Sears, 514 Penn St., Huntingdon.

Executive Committee—Fielding O. Lewis, Philadelphia; George B. Jobson, Franklin; Luther C. Peter, Philadelphia.

Stenographer—Miss M. Theresa Magee, Medical Arts Bldg., Philadelphia.

(Note—Essayists will please deposit *original* copies of their papers with the Secretary of the Section, when they have finished reading them. The printer will not accept *carbon* copies.)

Tuesday, October 3, 2 P. M.

Address of the Chairman.

George M. Coates, Philadelphia.

No. 1.

Eye Symptoms in a Case of Oxycephaly; with a Report of Autopsy.

Charles E. G. Shannon, Philadelphia.

Outline. Brief description of oxycephaly; shape of skull; x-ray examination; etiology and symptoms. Cause of blindness. History of case. Patient exhibits characteristic ocular signs and symptoms but no pronounced cranial deformity. Neurological and laryngological reports. Diagnosis made at autopsy.

Discussion opened by William Zentmayer, Philadelphia.

No. 2.

Some Neuro-ophthalmic Studies of War Injuries.

Hunter W. Scarlett, Philadelphia.

Outline. The syndrome of the sympathetic nerve injury in relation to the eyes is uncommon in civil practice, and was not frequent in military surgery. A few lantern illustrations will be shown, together with some interesting points in relation to occipital lobe injuries and visual defects. Mention must be made of the functional cases, injuries to individual nerves and various types of fundus lesions, especially "Hole in the Macula."

Discussion opened by Warren S. Reese, Philadelphia.

No. 3.

Diagnosis of Palsies of the Extra Ocular Muscles.

Edward B. Heckel, Pittsburgh.

Outline. Diagnosis of palsies of the extra ocular muscles—to be considered from an anatomical, physiological and mechanical standpoint, illustrated by models.

Discussion opened by Luther C. Peter, Philadelphia.

No. 4.

Etiology of Uveal Disease.

Burton Chance, Philadelphia.

Outline. While considering the consequences of septic infections, the paper will treat of the pathologic changes produced by constitutional diseases; the disorders of the blood and of nutrition; of the specific infections and fevers; the auto-intoxications, as well as, and especially, the transmission from focal infections.

Discussion opened by Lewis H. Taylor, Wilkes-Barre.

No. 5.

Practical Points in the Extraction of Cataract.

John B. Corser, Scranton.

Outline. The necessity for operation in smaller centers is discussed. Preliminary examination of patient. Preparation for operation. Training of patient. Choice of operation. Illumination (artificial or daylight). Dressing. Time chosen for after-dressing. Condition as to age and health of patient requiring special after-care. Complications and treatment. Results.

Discussion opened by Leonard G. Redding, Scranton.

No. 6.

Some Observations on Orbital Growths.

William T. Shoemaker, Philadelphia.

Outline.

Discussion opened by George H. Cross, Chester.

No. 7.

Orbital Affections Depending Upon Disease of the Accessory Sinuses.

Seth A. Brum, Philadelphia.

Outline. Does one sinus contribute more frequently than another towards orbital infections? The grossness of the nasal infection is not relative to the orbital involvement. Is it the juxtaposition of the lymphatic and vasculatory system that plays the rôle of infection transmission? The importance of having a thorough roentgenologist to collaborate in your diagnosis.

Discussion opened by Nelson S. Weinberger, Sayre.

Wednesday, October 4, 2 P. M.

Presentation of Cases, Specimens and Instruments.
Report of Executive Committee.
Election of Officers.

No. 8.

Cardiospasm.

Harry Peyton Mosher, Boston, Mass. (By invitation.)

Outline. Evidence is accumulating that cardiospasm is not caused primarily by spasm of the esophagus but by stricture. The strictures which are found in cardiospasm have a tendency to occur at the level of the upper edge of the left lobe of the liver. They may be produced by causes acting from within the esophagus or from without. In the first group are all infections of the esophagus capable of producing ulceration. and varous forms of trauma. In the second group, causes acting from without the esophagus are: tuberculosis of the abutting portions of the lungs or close-lying glands, or tuberculosis of the bodies of the thoracic vertebrae. The most common cause in the second group, however, is an upper abdominal infection which involves the lesser omentum.

Discussion opened by Chevalier Jackson, Philadelphia.

SYMPOSIUM ON HEADACHE.

No. 9.

From the Standpoint of the Ophthalmologist.

J. Milton Griscom, Philadelphia.

Outline. The type of headache encountered by the opthalmologist and the underlying factors in its causation are discussed.

From the Standpoint of the Otologist.

George W. Mackenzie, Philadelphia.

Outline. The otologist's part in a symposium on headache is to draw attention to those pathologic states in the ear that bear a more or less direct etiologic relationship to headaches. Concerning headaches of aural origin the writer emphasizes the following conclusions. First, that in uncomplicated middle ear suppuration, both acute and chronic, headache is not the rule, and in those cases in which it does occur, it is never pronounced; second, that in uncomplicated mastoid empyema with insufficient drainage, headaches, more or less severe, are fairly common; third, that in uncomplicated mastoid empyema with ample drainage, little or no headache is manifested, because of the mastoid involvement alone; fourth, that in every case of middle ear suppuration with or without mastoid involvement, the occurrence of headache should prompt the physician immediately to suspect one or another of the several complications referred to before; fifth, that headache is the most common symptom of every kind of intracranial complication of middle ear suppuration.

From the Standpoint of the Rhinologist.

George B. Jobson, Franklin.

Outline. Astonishing frequency of headache from nasal trouble. Causative factors; vacuum of frontal sinus, hyperplastic sphenoiditis, nasal ganglion neurosis, postethmoidal sphenoidal sinusitis, intranasal pressure from growths.

From the Standpoint of the Neurologist.

Charles W. Burr, Philadelphia.

Outline. Though those suffering from headache usually drift into the hands of the neurologist, as a rule the cause of the headache is entirely outside the nervous system. Headache itself is rarely caused by emotional strain; the sensations produced by emotional strain or so-called overwork are usually not pain but queer uncanny feelings, especially localized in the occiput. Reflex headache is really much rarer than is popularly supposed. Inflammatory disturbances in the sinuses are a very positive cause, but not as frequent as physicians in general fear. The sensations of the hysteric are almost pathognomonic of that disease.

Discussion on above papers to be opened by G. Oram Ring, Philadelphia; George F. Gracey, Harrisburg; J. Ferdinand Klinedinst, York.

Thursday, October 5, 9 A. M.

Presentation of Cases, Specimens and Instruments.

No. 10.

Otitic Meningitis.

Wells Eagleton, Newark, N. J. (By invitation.)

Outline. Subarachnoid irrigation; historical report of cases; experimental and practical observations. Analysis of cases of suppurative meningitis which have recovered and have been reported in the literature.

Discussion opened by James A. Babbit, Philadelphia.

No. 11.

Atypical Mastoiditis.

Matthew S. Ersner, Philadelphia.

Outline. Atypical mastoids. Objective and subjective symptoms. Laboratory findings. Intuitions.

Discussion opened by John J. Sullivan, Jr., Scranton.

No. 12.

Early Diagnosis and Treatment of Malignant Disease of the Larynx. (Lantern demonstration.)

Fielding O. Lewis, Philadelphia.

Outline. Clinical classification: First, intrinsic, i. e., arising from vocal chords, ventricles, ventricular bands, interarytenoid and subglottic area; second, extrinsic, i. e., arising from epiglottis, arytenoids, aryepiglottic folds, pyriform sinus and pharyngeal surface of the cricoid cartilage; third, mixed, consisting of intrinsic and extrinsic. The importance of a thorough examination in all cases of hoarseness lasting for more than a few weeks or complaining of general laryngeal discomfort, particularly after the age of forty (40). Do not wait for pain, cachexia, dysphagia, dyspnea or glandular metastasis. Intrinsic cancer of the larynx. when recognized early, can be cured. Because of its well arranged lymphatics metastasis is late. Should biopsy be practiced? There seems to be a precancerous state in many cases. Treatment—discussion and indication for: First, intralaryngeal excision; second, thyrotomy or laryngofissure; third, partial laryngectomy; and fourth, total laryngectomy; with report of cases. When should radium and x-ray be used? (Lantern slide demonstration.)

Discussion opened by Lewis Fisher, Philadelphia.

No. 13.

Voice Production.

Robert F. Ridpath, Philadelphia.

Outline. Review of the anatomy of the larynx, speaking voice, singing voice, hoarseness, loss of voice and cure.

Discussion opened by William A. Hitschler, Philadelphia.

No. 14.
Complete Tonsillectomy.
REIB NEBINGER, Danville.

OUTLINE. Consideration of tonsillectomy and reasons for its failure. Partial tonsillectomy has given the profession a bad name. Incomplete operation that frequently happens in hands of good men. Bacteriology of these apparently innocuous stumps. Author's method of securing complete removal.

Discussion opened by CLINTON J. KISTLER, Lehighton.

No. 15.
Some Principles Involved in the Bronchoscopic Removal of Foreign Bodies; with Illustrative Cases. (Lantern demonstration.)
FREDERICK J. BISHOP, Scranton.

OUTLINE. A plea for the earlier and more frequent use of the scope. Necessity for the instruction of the general practitioner, who usually sees these cases first. Operator should be mechanically inclined. Report of a few interesting cases successfully removed as well as one failure.

Discussion opened by ELLEN J. PATTERSON, Pittsburgh.

SECTION ON PEDIATRICS.

ARMORY: ROOM E.

OFFICERS OF SECTION.

Chairman—HENRY T. PRICE, 1011 Westinghouse Bldg., Pittsburgh.

Secretary—ROBERT K. REWALT, First National Bank Bldg., Williamsport.

Executive Committee—CHARLES H. MINER, Wilkes-Barre; WILLIAM N. BRADLEY, Philadelphia; HENRY J. CARTIN, Johnstown.

Stenographer—MR. T. F. ARNOLD, 355 Land Title Bldg., Philadelphia.

(Note—Essayists will please deposit *original* copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept *carbon* copies.)

Tuesday, October 3, 2 P. M.

No. 1.
Address by the Chairman.
HENRY T. PRICE, Pittsburgh.

No. 2.
Faulty Posture as a Cause of Obscure, Digestive and Nutritional Disorders, with a Report of Treatment of Fifty Cases.
PERCIVAL NICHOLSON, Ardmore.

OUTLINE. The interest in faulty posture as a result of the recent findings during the war. What we consider as constituting normal posture and what abnormal posture. The great number of cases showing minor defects in posture not noted nor treated, the treatment of posture being usually confined to extreme cases. The results produced by poor posture. The causes of poor posture. The symptoms produced by poor posture. A review of fifty cases, their symptoms and treatment. Methods of treatment and application of a new form of support.

Discussion opened by HORACE H. JENKS, Philadelphia.

No. 3.
Preventable and Correctible Deformities of Childhood.
EBEN W. FISKE, Pittsburgh.

OUTLINE. Pertinence of subject to practitioner. Large percentage of acquired deformity both preventable and correctible, and of congenital deformity correctible. Restoration of function concomitant with form. Principles of prevention of deformity, and examples of methods in general types. Principles and methods of correction of deformity in congenital and acquired forms, with examples from common types. Detection and prognosis of deformities amenable to treatment.

Discussion opened by DAVID SILVER, Pittsburgh.

No. 4.
Maldevelopment Due to Oro- and Nasopharyngeal Obstruction. (Lantern demonstration.)
WALTER T. ANNON, Philadelphia.

OUTLINE.

Discussion opened by GEORGE B. WOOD, and FIELDING O. LEWIS, Philadelphia.

No. 5.
Napkin Eruption of Jacquet. (Lantern demonstration.)
STANLEY CRAWFORD, Pittsburgh.

OUTLINE. An eruption of the diaper region of infants presenting various phases. Considerations as to its etiology—the ammoniacal diaper and superimposed pyococcic infection. Its differential diagnosis from other eruptions in this area, such as intertrigo, seborrhoeic dermatitis, impetigo, syphilis, etc.

Discussion opened by EDWARD P. CORSON, Philadelphia.

No. 6.
Some Acute Abdominal Conditions in Childhood.
J. P. CROZER GRIFFITH, Philadelphia.

OUTLINE. Difficulties in diagnosis. Intussusception, diverticulitis, pneumococcic peritonitis, appendicitis, reflex abdominal pain as in pneumonia, attacks of recurrent vomiting, pyloric stenosis, umbilical colic, etc., among the conditions met.

Discussion opened by ALBERT F. HARDT, Williamsport.

Wednesday, October 4, 2 P. M.

Report of Executive Committee.
Election of Section Officers.

No. 7.
Behavior Disorders in Children.
JOHN H. W. RHEIN, Philadelphia.

OUTLINE. Causes of behavior disorders: (1) Nervous affections including hysteria; (2) acidosis and other physical states; (3) personality disorders; (4) defective mental development; (5) non-adaptation to environment. Treatment of nervous and physical states best met by the rest cure.

Discussion opened by THEODORE H. WEISENBURG, Philadelphia.

No. 8.
Observations on the Nature of Essential Epilepsy.
CORNELIUS C. WHOLEY, Pittsburgh.

OUTLINE. (1) Especial help in understanding epilepsy afforded in a study of the disease as manifested in infancy and early childhood. (2) The epileptic constitution. (3) Comparison between epileptic and other convulsive types of reaction. (4) Inferences regarding the nervous and mental mechanisms involved, by an analysis of the "fit," the aura, the petit mal, the "equivalent," etc.

Discussion opened by GEORGE W. SMELTZ, Pittsburgh.

No. 9.
Raynaud's Disease in Children.
ALFRED HAND and JOHN P. REILLY, Philadelphia.

OUTLINE. Report of case. Raynaud's own definition of the condition excludes all gangrene due to endarteritis, embolism or thrombosis, and holds that the essential factor is a disturbance of the vasomotor control in the spinal cord.

Discussion opened by ERNEST L. KIESEL, Scranton.

No. 10.
Diagnosis and Treatment of Pylorospasm in Infancy. (Lantern demonstration.) (20 minutes.)
CLIFFORD G. GRULEE, Chicago, Ill. (By invitation.)

OUTLINE. Parallelism between pyloric stenosis and pylorospasm. Where the x-rays fail in differentiation. Importance of general symptoms and the relative intensity of symptoms in arriving at differentiation. Other conditions to be mentioned. Uncontrollable vomiting. Rumination. Intracranial conditions. Various methods of treatment of pylorospasm. The writer's procedure. Results.

Discussion opened by HENRY T. PRICE, Pittsburgh.

No. 11.
Nervous Manifestations of Rickets.
FRED E. ROSS, Erie.

OUTLINE. The importance of nervous manifestations which accompany rickets may outweigh the bony deformities which are so frequently considered. So-called "nervousness" in children may have the same etiological factors which prevail in rickets. The nervous child has a handicap which may continue through life and deprive him of his chances for usefulness. The treatment of the nervous child should, therefore, be conducted along the same lines as the most approved methods of curing rickets.

Discussion opened by PERCIVAL J. EATON, Pittsburgh.

No. 12.
Rickets with Special Reference to Its Etiology and Treatment.
EDWIN E. GRAHAM, Philadelphia.

OUTLINE.

Discussion opened by ROBERT K. REWALT, Williamsport.

Thursday, October 5, 9 A. M.

No. 13.

Health and Nutrition Work Among Pre-School Children.

Emily P. Bacon, Philadelphia.

Outline. I. Summary of pre-school age work done in various cities. II. Various standards of nutrition: 1, Weight—height; 2, Dr. Pirquet standard; 3, Dreyer and Hanson's system; 4, others. III. Methods: 1, Individual; 2, group. IV. Requirements for conducting pre-school age health class: 1. Location: (a) hospital; (b) day nursery; (c) health center; 2. Staff: Doctor, nurse, dentist, oral hygienist, demonstrator of cooking; 3. Equipment. V. Results: Determined by observations made on Starr Center Classes. VI. Conclusions.

Discussion opened by William N. Bradley, Philadelphia.

No. 14.

Medical Care of Dependent Children.

Horace H. Jenks, Philadelphia.

Outline. 1. Definition: (a) What children come under this classification for the purpose of medical work; (b) General scope of the work of the Associated Medical Clinic in Philadelphia in caring for the wards of the Children's Aid Society, Children's Bureau and other organizations having to do with caring and placing out of children; (c) The types of children going to the clinics. 2. The Special Needs of the Dependent Child: (a) Prevalence of malnutrition and its degree; (b) The need of the complete examination of the child including mental and moral problems; (c) The need of careful follow-up work for the dependent child in its foster home; (d) The necessity for careful and complete laboratory examination in connection with this work; (e) Supervision of these foster homes; (f) Necessity of re-examination of children at periodic intervals. 3. The Extent and Character of the Medical Care of Babies in Foster Homes: (a) Methods of feeding; (b) Methods of after care. 4. Character and Scope of the Work of Older Children, Boys and Girls: (a) Unusual extent of malnutrition and its care; (b) Mental problems; (c) The need of coöperation with trained social workers; (d) Special character of the work with older girls. 5. Summary and Conclusion.

Discussion opened by William N. Bradley, Philadelphia.

No. 15.

The Importance of Closer Obstetric and Pediatric Relations.

James K. Everhart, Pittsburgh.

Outline. The interdependence of various fields of medical work. Affections of the newborn. High infant mortality during the first month of life. Necessity for closer observations of the newborn. The importance of the child in the community. Reasons for the infant's coming early under the care of the pediatrist. Importance of early and continuous care. The pediatrist, from his training, the logical one to look after the infant. Training of the interne in infant care. Outpatient work. Ways in which obstetrician and pediatrist may coöperate.

Discussion opened by Harry J. Cartin, Johnstown.

No. 16.

Three Years' Experience With Thick-Cereal Feeding in Malnutrition and Allied Conditions in Infancy. (20 minutes.)

Harold R. Mixsell, New York City. (By invitation.)

Outline. A brief introductory and historical note is made of thick-cereal feeding. Directions are given in detail in regard to its preparation, and the chemistry of the polycarbohydrates is briefly reviewed. Its administration is then taken up in detail with special attention to water needs, etc. The indications for its use are enumerated, among the conditions in which it is of value being malnutrition, pylorospasm, pyloric stenosis, cow's milk intolerance, breast milk indigestion, acute gastritis, acute ileocolitis, eczema and allied skin conditions, and prematurity. The routine method of stool examination for starch is appended, a comparison is made of the value of the thick versus the semi-thick method of administering cereal. Case reports of the various conditions in which it has been used are given in detail, a comparison is made between this method and the Czerny-Kleinschmidt, and the Karo syrup-whole lactic acid milk, and definite conclusions are reached on the subject.

Discussion opened by A. Graeme Mitchell, Philadelphia.

No. 17.

Observations of Infant Feeding from the Vienna and Berlin Clinics.

Daniel E. Berney, Scranton.

Outline.

No. 18.

Nasal Diphtheria.

J. Donald Iams, Pittsburgh.

Outline. Considered serious form of disease by older writers. Frequency of occurence. Often relative mildness. Carriers. Importance of routine cultures. Statistics on morbidity and mortality. Diagnosis. Report of cases.

Discussion opened by D. Hartin Boyd, and Zaccheus R. Scott, Pittsburgh.

SCRANTON'S ATTRACTIONS

In the last week of June the Governor of our great Keystone State and the Governor of the great Empire State, with representative commercial bodies of northeastern Pennsylvania and southern New York joined in a felicitous celebration of the opening of the Lackawanna Trail, that unique highway link connecting the two great states, between southern New York and New York Harbor. It was an event without parallel in the history of this country.

The opening of this Trail is of more than ordinary interest to the members of the State Society, for it will have a prominent part in the outing features connected with the State Society meeting in Scranton in October. Over this Trail, in both directions, will be auto rides and outings for the families of the State Society members, two whole days having been arranged for in the program of entertainment by the Lackawanna County Society. The pleasures suggested by these outings will offer inducements never before held out to visitors to the State Medical meeting in Pennsylvania.

The Scientific sessions will be of unusual interest. Members of the Scientific Work Committee who have served previous years, unite in the opinion that the program is one of the best balanced that has ever been arranged.

The Goiter Clinic should be a feature of great interest, fully compassing, as it does, this important subject. The several types of goiter will be thoroughly discussed, and there will be a clinic and a demonstration of the basal metabolic test in connection with the presentation of some of the papers. Finally, there will be a paper by Doctor David Marine, of New York City, on goiter prophylaxis.

It was Dr. Marine who conducted that very complete survey among the high school girls at Akron, Ohio, a few years ago, in which the minute administration of sodium iodide as a prophylactic proved its unquestionable value in the prevention or disappearance of colloid goiter in growing girls.

This is a subject of greatest interest to every practitioner of medicine, and its appeal should be general and impelling to the members of the State Society.

BOOKS RECEIVED

The Practice of Medicine, by A. A. Stevens, M.D., Professor of Applied Therapeutics in the University of Pennsylvania; Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Octavo of 1,106 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $7.50 net.

Diseases of the Eye. For students and general practitioners. By Charles H. May, M.D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York; Attending Ophthalmic Surgeon to the Mt. Sinai Hospital, New York, etc. Tenth Edition, revised, with 377 original illustrations including 22 plates, with 71 colored figures. New York: William Wood and Company, 1922. Price $3.50 net.

The Writing of Medical Papers. By Maud H. Mellish, Editor of the Mayo Clinic Publications. 12mo of 157 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $1.50 net.

Female Weakness Cures—price 15c; Epilepsy "Cures" and "Treatments"—price 15c; "Obesity Cures"—price 15c; The Nostrum and the Public Health and Truth in Advertising Drug Products——price 10c. Prepared and issued by the Propaganda Department of the *Journal of the American Medical Association,* 535 North Dearborn St., Chicago.

Vital Factors of Foods, Vitamins and Nutrition, by Carleton Ellis, S.B., F.C.S., Consulting Chemist, and Annie Louise MacLeod, Ph.D., Associate Professor of Chemistry, Vassar College. Illustrated. New York: D. Van Nostrand Company 8 Warren Street, 1922. Price $5.00 net.

The Healthy Baby. The care of Feeding of Infants in Sickness and in Health. By Roger H. Dennett, B.S., M.D., Professor of Diseases of Children and Director of the Department in the New York Postgraduate Medical School, etc. Second edition, revised. New York: The Macmillan Company, 1922. Price $1.25.

The Surgical Clinics of North America, April, 1922. Volume 2, No. 2, San Francisco Number. Two hundred and fifty-nine pages, with 112 illustrations. Per clinic year (February, 1922, to December, 1922), paper $12.00 net; cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

Applied Chemistry. An Elementary Textbook for Secondary Schools. By Fredus N. Peters, Ph.D., Instructor in Chemistry in Central High School, Kansas City, Mo., for 23 years; more recently Vice-Principal; Author of "Chemistry for Nurses," etc. Price $3.50. Publishers: C. V. Mosby Company, St. Louis, Mo., 1922.

Symptoms of Visceral Disease. A Study of the Vegetative Nervous System in its Relationship to Clinical Medicine. By Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P., Medical Director, Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Second edition with 86 text illustrations and 10 color plates. Price $5.50. St. Louis: C. V. Mosby Company, 1922.

X-ray Dosage in Treatment and Radiography, by William Daniel Witherbee, M.D., Radiotherapist Presbyterian Hospital, New York; formerly Roentgenologist Rockefeller Institute; and John Remer, M.D., Radiotherapist New York Hospital, New York; Consulting Radiotherapist United Hospital, Port Chester. Cloth, 87 pages, illustrated. New York: The Macmillan Company, 1922. Price $1.75.

Food, Health and Growth, by L. Emmett Holt, M.D., Sc.D., LL.D., President Child Health Organization; Formerly Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Physician in Chief to the Babies' Hospital, New York. Cloth, 273 pages. New York: The Macmillan Company, 1922. Price $1.50.

Handbook of Organization and Method in Hospital Social Service. An Outline of Policies as practiced at the Johns Hopkins Hospital, Baltimore, Md. By Margaret S. Brogden, Chief of Social Service, The Johns Hopkins Hospital, Baltimore, Md. Cloth, 77 pages. Baltimore, Md.: The Norman, Remington Co., Publishers. Price $2.50.

BOOK REVIEWS

NERVOUS AND MENTAL DISEASES, Volume No. 8 of Practical Medicine Series, published by the Year Book Publishers and edited by Peter Bassœ, M.D., Professor of Physical Diagnosis in Northwestern Medical School.

The book represents an effort of the Year Book Publishers to cover for the general practitioner, the entire field of medicine and surgery in eight volumes, each volume complete on the subject which it treats, one year prior to its publication. The series are arranged in special volumes, in order that the general practitioner may purchase only the series covering the subjects in which he is particularly interested.

Bassœ's presentation of the Section on Nervous and Mental Diseases, is in thorough sympathy with the publisher's wishes and he presents his text in such a way that its subjects are readily referred to and comprehensive to read. The reviews are numerous as one would expect, but they are abstracted in such a way that it places a valuation on the text.

The text taken as a whole appears to fulfill its mission and is recommended by the reviewer to those who are interested in the general review of literature dealing with nervous and mental diseases, which appeared one year prior to the publication of this volume.

J. A. J.

THE MEDICAL CLINICS OF NORTH AMERICA, May, 1922, Chicago Number, Vol. 5, No. 6. Philadelphia and London: W. B. Saunders Co.

Following is a list of the articles in the latest volume of the Clinics: Abdominal Reflex Disorders, by Dr. A. R. Elliott; Diagnosis of Gastric Neuroses, by Dr. J. C. Friedman; Abscess of the Kidney, Chronic Diarrhea, Ulcer of the Duodenum, by Dr. M. M. Portis; Pernicious Anemia, by Dr. C. S. Williamson; Diseases with Associated Changes in the Spleen and Liver—Indications for Splenectomy, by Dr. A. F. Byfield; Banti's Disease, Leukemia with Gout and Herpes Zoster, by Dr. J. G. Carr; Goiter, by Dr. C. A. Elliott; Endothelioma of the Dura, Carcinoma of the Lung, Abscesses Following Cholecystectomy, by Dr. C. L. Mix; Hysteria, by Dr. R. C. Hamill; Friedreich's Ataxia in Twin Boys, by Dr. J. H. Hess; Valvular Heart Lesions, by Dr. E. K. Kerr; Auricular Fibrillation, by W. W. Hamburger; Treatment of Premature Cardiac Contractions with Quinidin Sulphate, by Dr. F. M. Smith; Heart Disease and Pregnancy, by Drs. P. A. Daly and S. Strouse; Nephritis in Pregnancy, by Dr. E. L. Cornell; Infantile Eczema, by Dr. C. G. Grulee; Carbon Monoxid Poisoning in a Child, by Drs. I. A. Abt and D. B. Witt; Acute Mastoiditis, by Dr. R. Sonnenschein; Feeding the Baby Himself, by Dr. J. R. Gerstley. A. A. E.

SURGICAL CLINICS OF NORTH AMERICA, Philadelphia Number, February, 1922. Philadelphia and London: W. B. Saunders Company, 1922.

Tumor of Pituitary Body, Accompanied by Abscess of Brain Due to Fracture (left) of Skull: J. Chalmers DaCosta.—Patient was trephined on day of fracture.

Usual signs of motor trouble on right side. Jacksonial epilepsy, loss of vision, headaches and minus reflexes developed—all of gradual onset. Loss of vision due to star-shaped opacities of lenses. No choked disc, no palsy of eye muscles. Gain in weight of 30 lbs. X-ray showed destruction of clinoids and enlargement of sella. Later bilateral temporal hemianopsia developed, together with an increase in carbohydrate tolerance. Attacks were preceded by olfactory and gustatory auræ—hideous odor and horrible taste—premonitory of pituitary epilepsy due to pressure on the uncinate lobe. Sudden respiratory failure three weeks after receipt of injury. Postmortem disclosed an abscess ruptured in the ventricle, and a round-cell sarcoma of the pituitary gland, weight 18 gm. and measuring 3x3 c.m.

Resection of Large Bowel for Obstructive Strictures (9 cases): A. P. C. Ashhurst.—These may be either benign or malignant. Herniæ often accompany obstruction when chronic. Strictures sometimes follow perineal infections. When the stricture is low down resection may be done by removal of coccyx, separation of gluteus maximus from sacrum, opening peritoneal cavity, ligation of the superior hemorrhoidal artery, with levator ani cut away on either side, and an end to end anastomosis performed by through and through sutures with knots on the outside. If the stricture is higher up at the rectosigmoid, after division of bowel and enucleation of growth down to perineum, the upper sigmoid is pulled down into the anus by a long rubber tube fixed into bowel at time of excision and caught by long forceps through the anus. This is the combined abdominal-anal extirpation. In these cases only one-stage operations were performed, although the author thinks he might have saved one or more of his fatal cases by the Mickulicz two-stage operation. The x-ray findings were generally confirmed at operation. The article included 22 illustrations. Inoperability is due to neglect of fair warning symptoms, and Bloodgood is quoted to the effect that "'tis a disgrace to have carcinoma, as it is largely a preventable disease."

Harelip and Cleft Palate Cases: Warren B. Davis.—This article suggests the classic methods of repair of Langenbeck, Brown, Lane, Ferguson, Roberts, Davis and others, plus the personal touch of all surgical work. Dr. Davis is not deterred by the warning of Brown not to forcibly correct bony facial deformities in the very young. The premaxillæ are fractured and forced into correct positions in the early months of life, and the closure of hard and soft palates left to later periods—15 to 20 months. Bony structures are held by wire and the triangle removed from the vomer when necessary. For lip closure accurate measurements are made by the Thompson calliper method, marking off accurate angles and denuded areas. The usual precautions are taken for correction of alæ nasi and for preservation of hard palate flaps. Two cases of secondary hemorrhage are cited. These were rather unusual and were probably due to unnecessary severance of the postpalatines. The minute technic is learned only by experience; and the trying difficulties and frequent failures should deter the inexperienced surgeon from attempting this highly specialized department of oral surgery.

Brain Tumors and Cerebrospinal Fluid: C. H. Frazier.—Radium does retard growth of brain tumors. Internal hydrocephalus is due either to obstructive pressure on the ventricles (relieved by decompression) or to a perverted state of circulation and absorption or posterior fossa tumors (decompression not indicated). Seven hundred and twenty c.c. may be secreted in 24 hours, hence lumbar puncture or decompression are inefficient in many cases. Thyroid extract is indicated in the nonobstructive form. Ventriculograms are helpful in diagnosis of ventricular deformities, as well as aspiration of the ventricles in suitable cases.

Dr. Frazier describes the technic of the above operations, and discusses problems which arise on the operating table. He advises dehydration by sodium chloride in cases of edema or excess of cerebrospinal fluid. By the administration of sodium chloride, either intravenously or by mouth, there is a shrinkage of brain volume and a rapid absorption of cerebrospinal fluid. In posterior fossa tumors, ventricular puncture is made preliminary to dural incision. Though the subtemporal is the favorite site, decompression should be made over the suspected tumor, wherever located.

Embryonal Adenosarcoma of Kidney: Geo. P. Muller.—This article is a report of a case.

Hemolytic Intero-anemia: Geo. P. Muller.—R.B.C. 2,270,000. After three transfusions this was 3,920,000. After the transfusions splenectomy was performed. Gall-stones are often present with the anemia (60%), requiring cholecystectomy; but the anemia, the large spleen and the mild acholuric jaundice between attacks point to the primary condition. The mortality of the operation in good hands is 5%.

Thrombo-angeitis Obliterans (Buerger): Geo. P. Muller.—This is sometimes called erythromelalgia. It attacks the feet chiefly, and amputation is often necessary. It is in the same group with Raynaud's disease, scleroderma and acrocyanosis. One of the newer treatments is the Leriche operation of femoral sympathectomy. Buerger believes the disease is due to an acute inflammation in the blood vessel walls, forming obliterating thrombi in both arteries and veins. Dr. Arthur E. Davis, Scranton, recently exhibited before the Lackawanna County Medical Society a patient with this disease. Dr. Buerger's patients were chiefly, if not exclusively, Hebrews. Dr. Davis' patient was not.

Duodenal Ulcer; Pylorectomy; Postgastro-enterostomy: John B. Deaver.—There are three possibilities of issue in ulcer cases: perforation, hemorrhage and malignancy. This is especially true in gastric ulcer. The clinical analysis of gastric and duodenal contents make more impression on the patient than on the experienced surgeon, as do also duodenal washings, serum, etc. An x-ray report is not necessary. The capacity of stomach and retention may be diagnosed by air inflation and by use of the tube. X-ray, analyses, anacidity, occult blood—none of them are reliable. The history should be interpreted carefully. Minute superficial and deep palpation should be done, and the gall-bladder area differentiated from the ulcer area by palpation. The appendix as a factor must never be forgotten. Hunger-pain is present in chronic disease of the gall-bladder. The most important point is the long duration of symptoms with intervals of entire freedom. The promise of a cure of chronic ulcer by medical measures is "only a delusion," like promising a cure in appendiceal abscess when only the pus and not the appendix is evacuated. "The medical man walks by faith; the surgeon by light and faith." Pylorectomy is advised as the most permanent curative measure.

Adenocarcinoma of the Breast: John B. Deaver.—The Halsted operation is used, with rare resorts to skin grafting. The outer incision from the insertion of pectoralis major is well within the line of the anterior axillary margin, so that the scar will not cross the axilla obliquely and perhaps bind the arm to the side of the chest wall.

Recurrent Cholecystitis; Cholecystectomy: John B. Deaver.—Interstitial cholecystitis is often associated with or develops from hepatitis, infection being carried to the walls of the gall-bladder by the lymphatics of the liver, which communicate with the lymphatics of the gall-bladder. Descending infection from the liver or ascending infection for the common duct are not common avenues of infection.

Much of value is added to these clinics by the learned seriatim review of the pertinent pathology by Dr. Stanley Reibman. D. A. Webb.

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ADDRESS

THE CHEMICAL CONTROL OF RESPIRATION*

J. J. R. MACLEOD, M.D.
TORONTO, CANADA

I am making a hazardous experiment this afternoon, in attempting to give you in a few minutes a simple and intelligent idea of such a very difficult subject as the chemical control of respiration. Nevertheless, I venture to do this because I believe that there is no field that is so likely, in the near future, to have so important an application in the interpretation of symptoms that are at present very puzzling, as is afforded by a study in this field of knowledge.

When one stops to think of the function of respiration, one is immediately impressed with its extreme complexity. The muscles that take part in the respiratory movements are, of course, innervated from the local centers, which are controlled by a chief center; and the function of this chief center results in as fine a nicety of control as is known in any other physiological act. The chief respiratory center, in order that it may function properly, must be informed of the respiratory requirements of the animal. It needs to be apprised of the necessity for a greater or less volume of respired air. This information may be supplied through nervous control from outward stimuli, or it may be chemical, due to changes in the blood. Since the respiratory function is for the purpose of controlling the chemical composition of the blood, we should expect to find that the chief center is informed of the necessity of the body for respiration in the latter way; and we may speak of the chemical changes as constituting the respiratory hormones.

In considering the nature of this hormone, it is well to remember that the function of the lung is to regulate the gaseous composition of the blood, supplying it with oxygen and removing carbon dioxide; and of these gases, the one that should naturally demand first attention as the possible hormone is the carbon dioxide.

One may, therefore, assume that the main respiratory regulator is the carbon dioxide of the blood. Now let us test this working hypothesis and see how far it can stand.

It is very interesting and easy to demonstrate a precise and quantitative relationship between the percentage of carbon dioxide in inspired air and respiratory activity. R. W. Scott found that when the percentage of carbon dioxide in the inspired air was increased to near the percentage of carbon dioxide in the alveolar air, the respirations were increased by four or five times over the normal; and that this was always predictable, if the experiment was done properly. He found, however, that the question as to whether carbon dioxide is the respiratory hormone is not settled by this simple experiment. He had to consider two things that might happen as the result of inspiring an excess of carbon dioxide: either that the carbon dioxide had itself stimulated the respiration, or that it had altered something in the blood which was the real respiratory hormone. That is, the action of the carbon dioxide was either direct or indirect. The property of the blood that carbon dioxide could influence is the reaction (p. h.). In considering this, we enter a field in biochemistry that is being intensively explored—the hydrogen ion concentration of the blood.

For the present, we must note that there are many other factors concerned in maintaining the normal hydrogen ion concentration; but there is none which produces a quicker or more marked change in it than free carbon dioxide in the blood plasma. With this fact in mind, the question arises whether the increased respiratory stimulation in the foregoing experiment may not have been caused by the increased hydrogen ion concentration of the blood. Scott found that such an increase did actually occur during the breathing of air rich in carbon dioxide.

There is also other experimental evidence to show that increased acidity of the blood increases the respiration. The intravenous injection of acid, even hydrochloric acid, will, for example, have this effect. For the present we must bear in mind, therefore, that the increase in the hydrogen ion concentration, as well as an increase in the carbon dioxide, will stimulate respiration; and the further question arises, which is the more important? Let me relate an experiment:

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*Delivered before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

If you inject into an animal a sufficient amount of alkali to lower the acidity markedly, and so make the blood a little alkaline, and then administer carbon dioxide, the respiratory center is excited almost as much as in a normal animal. It is excited, though the blood, during the whole time of the administration of the carbon dioxide, is still alkaline. The conclusion is inevitable that it cannot be the changes in the hydrogen ion concentration of the blood alone that act as a respiratory stimulus. There must be something else which is associated with the presence of free carbon dioxide. That brings us into a dilemma: Are we to conclude that carbon dioxide is a specific respiratory stimulant, irrespective of its effect on the hydrogen ion concentration?

Much light has been thrown on the problem by some experiments of an entirely different nature recently performed in the Zoölogical Laboratory of the University of Pennsylvania by Dr. Jacobs. These are fundamental experiments. They are experiments in general physiology, a subject which is going to be very important for the clinician. Jacobs has shown that the point about carbon dioxide in affecting the respiratory center is not that it is a specific excitant of the respiratory center, but that it is the most penetrable acid for cell walls. It penetrates into the cell through the cell membrane. It can penetrate this wall much more readily than can any other member of the acid group—perhaps hundreds of times more readily; and when it is inside the cell, it reacts with certain salts—phosphate, for example—to raise the hydrogen ion concentration in the cytoplasm.

The work of Jacobs harmonizes the work of the two different experiments that I have described. It shows that it is not the hydrogen ion concentration of the blood that is the respiratory stimulant, but an increase in the hydrogen ion concentration within the cells of the respiratory center, due to the fact that carbon dioxide penetrates the walls of these cells and, by its reaction with salts (phosphates) in the cytoplasm, causes an intracellular increase of the hydrogen ion. This is pure physiology, with probably no apparent clinical application at present; but possibly those working in the field will soon find that there is a clinical application. If you read the papers of Jacobs or others working in this field, you may possibly find that it is the key to unlock a great many mysteries in the field of physiology and functional pathology.

If the free carbon dioxide in the blood is the chief respiratory hormone, it is important to measure it; and the question arises, can we measure the free carbon dioxide in the blood? We cannot do it by taking the blood, mixing it with acid, and seeing how much carbon dioxide comes off. That would show only how much carbonate there is in the blood. We do not want to know that. We want to know how much free carbon dioxide there is in the plasma, and there is only one method of finding this out. That is, by exposing the blood for some time in a confined atmosphere, and then analyzing the atmosphere to see how much carbon dioxide has been given up to it. We know that the amount in the blood in simple solution must be proportional to the percentage in this confined atmosphere. It is too elaborate a procedure, even with refined technique, to take the blood from the body and expose it to a confined atmosphere. It is too difficult a procedure for practical purposes. Is there any simple way? Fortunately, there is: namely, by taking advantage of the fact that in the lungs the alveolar air is a confined mass of air in contact with a film of blood; so that the arterial blood, as it leaves the lung, will have the same percentage of carbon dioxide as the alveolar air. That is why we analyze alveolar air—not because someone thought that it might be useful, but because the carbon dioxide in the alveolar air is a very reliable index of the amount of carbon dioxide in simple solution in the blood plasma going to the respiratory and other centers. This is known as the tension of carbon dioxide.

Armed with this knowledge, let us now see in how far respiratory activity runs parallel with the percentage of carbon dioxide in the alveolar air. If you analyze the alveolar air in many conditions, you will often find that the respirations are decidedly increased when the alveolar carbon dioxide is lower than normal—the opposite of what we should expect from the theoretical considerations that I have discussed. How are we to explain this apparent contradiction to the above hypothesis? How does it come about that you have respiratory stimulation with a low percentage of carbon dioxide in the alveolar air? It is in clinical conditions, more particularly, that we meet with this apparent anomaly; and there are three general causes for a lowering of the carbon dioxide. One is the presence of other acids in the blood, as in diabetes and probably nephritis (true acidosis). The second cause depends on the development of another respiratory stimulant, namely, oxygen deficiency; and the third operates when there is nervous stimulation of the respiratory center.

Regarding the first group (namely, true acidosis), I will say practically nothing. The symptoms, you are all familiar with. Besides the low carbon dioxide in the alveolar air, there is deficient available alkali in the blood; and there is present in diabetes, at least, an excess of ketonic acids in the organism. You also know that there are certain clinicians who believe that the symptoms of diabetic acidosis are not due to a disturbance of the acid base equilibrium, but to a specific toxic action of the acetone bodies.

I wish to call particular attention to the second cause for lowering of the alveolar carbon dioxide, namely, the condition known as anoxemia. There is nothing more important at the present time than the work that is being done on this interesting condition. The methods of studying anoxemia are quite numerous. Very important work was done in testing candidates for the aviation service, first in England, and later in this country; and a valuable monograph on the subject has been published by the Medical Laboratory of the United States Aëronautical Service. It is a careful study of the objective and subjective symptoms of candidates during respiration in an apparatus in which the oxygen percentage in the inspired air was gradually lowered. It was found that at a certain stage respiratory stimulation set in, which would, of course, lower the alveolar carbon dioxide. Then other symptoms followed, which have been precisely described. I shall not say more of this, but I will refer to experiments done at Oxford and Cambridge by Drs. Haldane, Barcroft, Meakins and others, in which several persons subjected themselves to experiments in respiratory cabinets, the atmosphere from which was forced out with a powerful pump or was replaced by nitrogen until the oxygen percentage was only one-half its normal. A study was then made of the symptoms and of the changes in the alveolar air and blood. Besides respiratory excitement there was definite cardiovascular disturbance. Nervous symptoms also were definite but quite variable among the different subjects. They included such things as anesthesia (entire anesthesia of the legs was noted in some instances), muscular twitchings and visual and auditory sensations. These men found that however long they stayed in the respiratory cabinet—and Mr. Barcroft stayed for five days at half the oxygen percentage of normal atmospheric air—no sickness occurred. That is different from the experience of persons during mountain sickness. They never suffered from any of the classical symptoms of this condition. Even though the experiments were not adequately controlled in every detail, they indicate what symptoms to expect in patients suffering from disturbances in which anoxemia is likely to occur.

There are many clinical conditions, toxic and otherwise, in which the essential symptoms are due to a deficiency in oxygen; and these, as suggested by Barcroft, may be divided into three groups: First, anoxic anoxemia—anoxemia in which there is a deficiency of oxygen in the inspired air, as in the foregoing experiments. It is also found in mountain sickness, in aëroplaning, in balloon work and—not so frequently now, but occasionally—in mining and in submarine work.

The second class, which may be called hemic anoxemia, is due to a deficiency in the oxygen-carrying power of the blood. In this group are included carbon monoxide poisoning and conditions in which there is a disturbance of the hemoglobin of the blood, as in the anemias.

The third is called ischemic anoxemia, where the circulation of the lungs is interfered with, as in cardiovascular disturbances, pneumonia and other clinical pulmonary conditions.

Now, a most interesting thing in all these conditions is this: that the oxygen deficiency stimulates the respiratory center. It is not nearly so acute a stimulus as is an increase in carbon dioxide, but it is a second-grade stimulus. When it becomes so intense as to develop its stimulating effect, the increased respiration causes the blood to become over-ventilated in the lung. Therefore, the free carbon dioxide is washed out of the blood by the increased ventilation. As a result there is a relative excess of alkali in the blood. Carbonic acid gas has gone off, and has left an excess of alkali; and immediately the whole organism reacts to the changed conditions. The reactions include a decrease in the acidity of the urine, a diminution in the ammonia excretion of the urine, and a lowering of the alkali reserve of the blood. The alkalosis which is thus developed also interferes with the power of the blood to give off oxygen—a condition that will get progressively worse if the anoxemia is maintained. As I have noted, the breathing also becomes very shallow. This shallow breathing introduces a further disturbing factor, because there comes to be relatively too much dead space in the lungs so that the oxygen does not get so freely to the blood, and a vicious circle is thereby established, the anoxemia growing progressively worse.

Ultimately the effect of the oxygen deficiency spreads to functions that are vital, and the condition becomes a terminal one unless means are taken to avoid the deficiency of oxygen supply.

Now I must not take up more time. I want, however, to point out one among the many clinical applications that arise from the observation; and that is, the undoubted value of the early administration of oxygen in cases where there is any likelihood of anoxemia. It should be administered early, before the vicious circle referred to starts. The present methods of oxygen therapy are wrong; but Meakins and many others have definitely shown that if oxygen be given properly, in many cases of pneumonia and cardiac decompensation the symptoms are much relieved, and as far as the statistics at present show, the chances of recovery are apparently much improved. There is no use in giving oxygen by the old-fashioned method of suspending a funnel over the patient's face, with a tube delivering oxygen. I tried this once myself, to see whether there was any effect on the oxygen percentage of the alveolar air, and there was none. The method of administering the oxygen is extremely important. If one cannot have a respiratory cabinet for giving it (which is usually the case, although these cabinets are being made now by Siebe Gorman in London, and Leonard Hill has devised one which is portable), the most practical method is to use either the gas mask or, if the patient objects to the confinement, the hollow tongue-depressor which Meltzer described some years ago. Rudolph and I found that with this apparatus, well over sixty per cent of oxygen could be introduced into my alveolar air. That is really doing something; and there is not the slightest doubt on theoretical grounds that it is the proper thing in cases of threatened anoxemia, at least to see whether the giving of more oxygen would not prevent the development of the vicious circle, which must ultimately be fatal.

Finally, I would point out that I have touched only a few of the high lights of the subject. The work that is being done now on the subject of respiratory chemistry will undoubtedly, in a short time, explain many of the obscure conditions connected with the respiratory center; although we must also remember that there is a nervous control and that many disturbances may be dependent on this. Change in carbon dioxide tension is a physiological stimulus. That seldom goes wrong. The thing that does go wrong is the secondary stimulus, the oxygen deficiency, producing the condition of anoxemia.

ORIGINAL ARTICLES

THE IMPORTANCE OF EXAMINING THE DIAPHRAGM*

ELMER H. FUNK, M.D.

PHILADELPHIA

It is a curious fact that while most men agree as to the importance of the diaphragm, few investigate it clinically during the course of the usual physical examination, and few pathologists pay any but the most superficial attention to it during the ordinary postmortem study. The functional integrity of this structure is necessary for proper respiration. Structural changes and functional disorders are common, especially in association with lesions of the thoracic organs involving the pleura and pericardium. It is the purpose of this paper to call attention to the ease with which information concerning the diaphragm function can be obtained and the help which this knowledge renders in the differential diagnosis of diseases of the chest and the upper abdomen. First of all, then, I would discuss briefly the methods of examination and then, secondly, the lesions in which the diaphragm is involved.

METHODS FOR EXAMINATION OF THE DIAPHRAGM

Inspection—The Diaphragm Sign of Litten: In 1892 Litten called attention to the fact that it was possible to observe externally the phenomena of the separation of the diaphragm from the chest wall. The diaphragm sign is described in all the textbooks on physical diagnosis. It is present in practically all normal individuals and is most clearly made out in young, lean, muscular individuals with good expansion. It is occasionally absent in health in those individuals who are short and stout with an abundance of subcutaneous fat, and are unable to make deep inspiratory and expiratory movements. The diaphragm shadow appears in the sixth interspace with the inspiratory separation of the diaphragm from the chest wall and disappears as the separation is filled by the descending wedge of lung tissue. As it disappears from the sixth it appears at the seventh, and so on, until it appears and disappears as low as the eighth or ninth interspace. The shadow is absent in all conditions which interfere with "the peeling off" movement, e. g., in solidification of the lower lobe, in marked emphysema, in pleural adhesions and effusions. It is present in hepatic and splenic enlargements, in subphrenic abscess, and thus serves to help in the differential diagnosis of lesions above and below the diaphragm.

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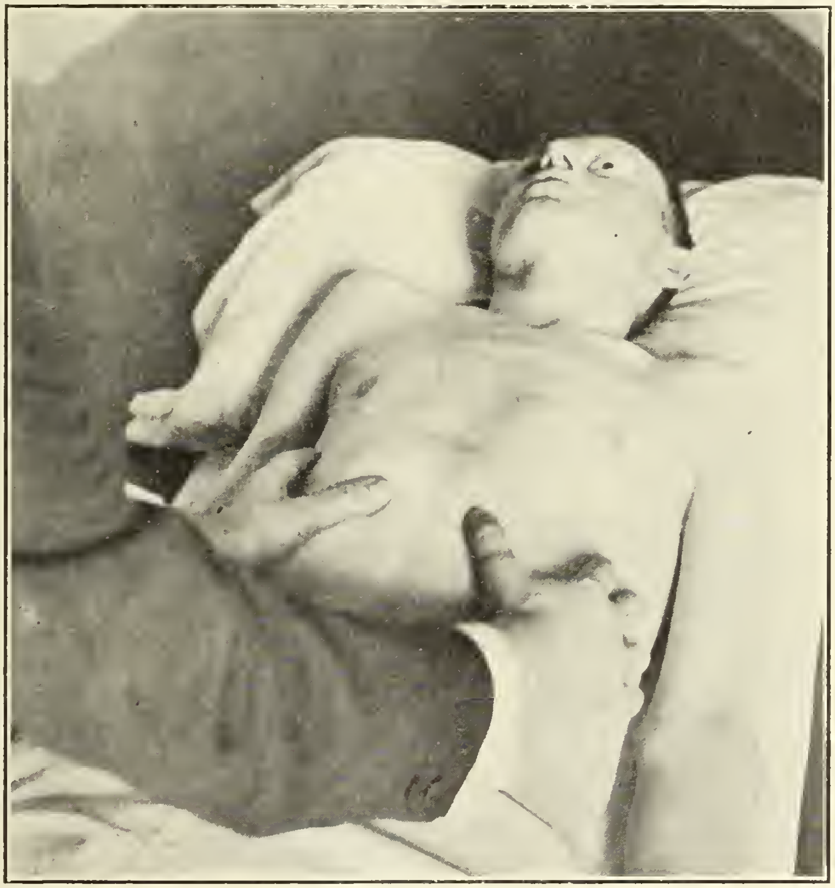
*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Palpation—The Movement of the Costal Margins of the Subcostal Angle: In the normal individual there is a moderate widening of the subcostal angle due to divergence of the costal margins upon inspiration. The tendency of the diaphragm to pull inward along its interior and lateral insertions is more than overcome by the outward flaring of the margins of the subcostal angle by the action of the scalene and intercostal muscles. When, however, the diaphragm is placed at a greater mechanical advantage, as occurs when it is lowered in position, it secures a power which equalizes or overcomes the scalene and intercostal muscles and a fixation or actual narrowing of the subcostal angle occurs upon inspiration. The reverse is likewise true, namely: when the diaphragm is placed at a mechanical disadvantage such as occurs in certain high positions (e. g., eventration, subphrenic abscess) or when the muscle is paralyzed as a result of a lesion (e. g., of the phrenic nerve), the intercostal muscles acting unopposed produce a greater widening of the subcostal angle than normal, resulting in exaggerated flaring of the costal margins. The altered movements of the costal margin may be bilateral or unilateral, depending upon the bilateral or unilateral alteration in the conformation of a diaphragm dome. In observing the movements of the margins of the subcostal angle, palpation is of greater aid than inspection. The illustration shows the position in which the patient is placed: the bearing of the lower chest and upper abdomen, the position of the hands with the thumbs pointing toward the ensiform cartilage and resting upon the costal borders of the angle. The patient is asked to breathe a little deeper than normal and the movements of the thumbs are visible and felt.



Method of Palpating Diaphragm

Hoover[1] of Cleveland has been foremost in stressing the value of this method of examining the diaphragm movements. To quote his words: "Emphysema of both lungs will cause flattening of the entire phrenic dome. Unilateral pleurisy with effusion and pneumothorax will diminish convexity of one-half of the diaphragm. Pericarditis with effusion will flatten the entire subcardial diaphragm and leave the lateral and posterior portions unmodified. Enlargement of the left ventricle will depress the subcardial portion of the diaphragm to the left of the median line much more than to the right of the median line. Dilatation of the right ventricle and right auricle will depress the subcardial diaphragm to the right of the median line much more than to the left of the median line. Convexity of the entire diaphragm may be increased by ascites or tympanites; the right half of the diaphragm may have its convexity increased by enlargement of the liver; while the left half may have its convexity increased by tumors of the spleen or stomach. Subphrenic abscess may also increase the convexity of either side. In obsolete pleurisy there may be a shortening of the longitudinal diameter of the thorax and an increase in the concavity of the under surface of the diaphragm. But in these cases there are always synechiæ between the diaphragm and the chest wall, and consequently the diaphragm is given a new point of insertion; instead of being at the end of the ribs, it will be at the inner surface of the chest wall. So, although the under surface of the diaphragm may have its concavity increased, there is lessened convexity of the upper surface of the effective portion of the diaphragm."

Percussion—To Determine the Diaphragm Movement: The position of the diaphragm, and more particularly the movement of the diaphragm, can be demonstrated by percussion of the lower pulmonary borders. Since the vertical movement is greater posteriorly than anteriorly, the percussion examination is directed more particularly to the back. The lower border of pulmonary resonance is noted upon deep expiration and deep inspiration. It is performed on both sides posteriorly in all patients, and laterally and anteriorly in instances in which one wishes to be especially investigative. The distance between the lower levels of pulmonary resonance on inspiration and expiration is normally between 2 and 2½ inches, slightly less in females and in shallow breathers. As a result of percussion studies one also determines the note above and below the diaphragm which is helpful in the differential diagnosis of associated lesions. It is well to recall that the diaphragm may be fixed either in a higher position than normal or a lower position than normal, and in estimating the abnormality of its position its relation to the fixed points on the chest wall and its relation to that of the position of its other half must be noted.

Finally, *x-ray examination* is a valuable method for studying the diaphragm, especially by the use of the fluoroscope, whereby we can note its position, the extent of its movement, the rate and the rhythm of its action, and alteration in shadows above and below it indicative of adjacent disease or displacement of associated structures. Although a most valuable adjunct to diagnosis, it must be used only in coördination with other clinical methods. It cannot replace them. It is not infallible. It is not always available. It requires experience to interpret. The simple methods of inspection, palpation and percussion which I have outlined above, are available to all who will give a few moments of time to their investigation.

DIFFERENTIAL DIAGNOSIS OF LESIONS INVOLVING THE DIAPHRAGM

It is not the purpose of this paper to discuss the various pathological lesions of the diaphragm, some of which are primary, but most of which are secondary to lesions in adjacent viscera. The point I wish to emphasize is that these lesions in adjacent viscera give signs which are often very similar and unless the position of the diaphragm is determined, their correct interpretation is often most difficult; to wit: an empyema and subphrenic abscess, or eventration and pneumothorax, etc., etc. The following conditions are associated with high position of the diaphragm with lessened motility: eventration, pulmonary fibrosis with adhesive diaphragmatic pleuritis, massive collapse of the lung (Pasteur), subdiaphragmatic abscess (simple, or nongaseous, and gaseous), paralysis of the diaphragm due to a phrenic nerve lesion, central or peripheral. Low position of the diaphragm with lessened motility may result from (1) the increased intrathoracic pressure of pleural effusion, pneumothorax, pyopneumothorax, emphysema, pericardial effusion, enlarged heart, tumors, etc., etc.; (2) traction on the peritoneal side, and (3) spasm of the diaphragm.

Not only is the determination of the position and motility of the diaphragm of value in differentiating thoracic from abdominal lesions in its vicinity, but of occasional value in differentiating lesions on the same side; thus, in pericardial effusion versus cardiac enlargement, and those occasional instances when pericardial effusion and pleural effusion are confused. In pericardial effusion the fluid, when in sufficient quantities to impede the diastole of the heart, will give a symmetrical narrowing of the subcostal angle during inspiration. In cardiac enlargement the same thing may be found, although more frequently it happens that the subcardial diaphragm is depressed more on one side than the other. Thus, when left ventricular enlargement predominates, the left subcardial diaphragm is depressed, with the result that the left costal margin will remain fixed in inspiration or slightly drawn in. Enlargement predominating on the right side of the heart will effect corresponding changes in the movements of the right costal margin of the subcostal angle. This unilateral fixation of the left costal margin aided us materially in ruling out pericardial effusion in a recent patient who was admitted to the hospital with this diagnosis. The x-ray supported the clinical diagnosis of enlarged and dilated left heart. In an interesting instance of eventration of the diaphragm which Dr. Manges and I[2] recently published, the signs over the lower left chest suggested a pneumothorax. The x-ray revealed the high position of the diaphragm. The tympany, absent breath sounds, etc., were heard over a stomach in a position where the pneumothorax was supposed to exist. We had failed to study the position of the diaphragm before the x-ray revealed an incorrect diagnosis. The exaggerated inspiratory flaring of the left costal margin of the subcostal angle was quite evident when sought for. A pneumothorax would have undoubtedly caused an inspiratory fixation or perhaps narrowing of the same margin.

Time will not permit our further discussion of the application of the diagnostic methods outlined in the early part of this paper in the differential diagnosis of the many lesions of and about the diaphragm. These have been discussed at length in a previous paper.[3] I do wish to predict, however, that more attention will be paid to the investigation of this great muscle of respiration, the diaphragm, in the years to come.

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DISCUSSION

Dr. James I. Johnston (Pittsburgh): Our own feelings are the same as Doctor Funk's regarding the significance of the movements of the diaphragm in physical diagnosis. With the improvement of other means of diagnosis in the thorax as well as in the upper abdomen, the part played by the diaphragm has been much neglected. A study of the movements of this part of the thorax from a purely physical point of view has not kept pace with the refinements of study in palpation, percussion, auscultation, and the use of the fluoroscope. A study of the so-called Litten diaphragmatic phenomenon, both as a student observer and as a clinical teacher, has been very unsatisfactory throughout to many of us.

In clinical work it is often difficult to satisfy oneself with such a phenomenon, and hence it is doubly difficult to demonstrate satisfactorily to our students. By a very simple procedure we are able to show them movements of the diaphragm and their more or less definite clinical significance, both as to the side of the thorax in which pathology is located and even occasionally its nature and extent.

Ten years ago, while a member of the Interurban Clinical Society, the importance of a study of diaphragmatic movement was emphasized to us by Doctor Charles A. Hoover, of Cleveland. The impression made was so lasting that for some years we have taught this idea of the importance of diaphragmatic movement to our students and the ease with which such movements can be demonstrated. This we believe is an old sign, but its revival and the recognition of its value has led us to call it the "Hoover Sign." As you all know Hoover has carried much further the study of lower thoracic movement, but he deserves great credit for emphasizing and really reëstablishing this method of physical diagnosis.

During one whole winter on thoracic work in our office, we checked up the value of such studies in demonstrating the side and to some extent the damage to the chest from old pleurisy. Further, by this simple procedure we located, before our general physical examination, the side on which early pulmonary tuberculosis was emplanted and active.

In our ward work in the hospital as well as in our consulting work during the pneumonia period, we found that the pneumonic area could be quickly located on the side of the chest, even in its early stage, before the usual methods of diagnosis applied to the lung itself are used. This may sound somewhat useless, but recognition of undeveloped consolidation, even in an acute pneumococcic pneumonia, is not always easy, even by these latter signs; and we feel that in about 85% of all cases the side upon which the pathology is present can be picked out even before the lungs themselves are examined. At least we have repeatedly demonstrated the truth of this in our work. Furthermore in many of our cases this has been checked up in various diseases of the chest by the use of the fluoroscope. The value of diaphragmatic study with the fluoroscope cannot be questioned, and in all fluoroscopic reports such study is recorded for the clinician. Like all physical diagnostic methods it requires some skill to interpret such movements. But constant practice and thoughtful study of the information gained is very satisfactory, at least in our opinion.

During an epidemic in February of last year, when in our experience streptococcic hemolytic empyemas were repeatedly found, as well as other types of plural effusion, many of them small in amount, many encysted and in unusual areas of the chest, this method materially helped us to fix the side upon which our search should be directed. This observation was almost invariably confirmed by a study of the movements of the diaphragm and chest under the fluoroscope.

Perhaps the movements of the diaphragm have been considered so simple and useless that they have thus been neglected, but those of us particularly interested in thoracic work must use and value any sign, however simple, that can be elicited. In our opinion the signs gotten here are neither simple nor useless. In regard to the upper abdominal region, such study of the diaphragm is also of marked value and is also frequently neglected. This subject was presented before the American Medical Association by Sale in 1918, but the value of the points raised at that time seems to have been disregarded by most physicians and surgeons.

The method that we employ is with the patient lying on his back, the thighs flexed upon the abdomen. The examiner then grasps both sides of the lower thorax with the thumbs of each hand over where the ninth rib joins the sternum by its costal cartilage. When possible the patient is instructed to inspire and expire as deeply as possible, although when the respiratory excursions are rapid and embarrassed, this is not necessary. The observations are also helped by a vertical line made with a marking pencil along the upper portion of the middle abdomen. The movements of the two thumbs placed as above are then noted. Normally they go through the same outward and upward range and any abnormality of one side can be detected, whether delayed, of limited range, of outward and upward movement, stationary, or actually drawn inward toward the middle line. These signs are indicative of pathology on the side on which any impairment occurs. Slight impairment would indicate such things as active pleurisy, pneumonia, early tuberculosis of that side, where the restriction would be due more or less to voluntary action. Definite marked restriction would indicate pleural effusion or extensive adhesions. Actual movement toward the middle line would indicate synechiæ from dense old adhesions of the pleura or actually of the pericardium. This discussion has taken no cognizance of the pathology in the diaphragm itself. Such rare things as diaphragmatic hernia, fistula into the pleura and lung from subdiaphragmatic abscess or from wounds are in a measure soluable.

Further refinement, as practiced by Funk and Hoover, with the grasping fingers between the lower ribs on each side of the thorax and sufficient pressure made with them, add to the value of this diagnostic procedure.

Dr. Alexander Sterling (Philadelphia): I should like to ask whether Dr. Funk has noticed any abnormal positions of the diaphragm in bronchial asthma cases? The question is: How can one recognize clinically whether the diaphragm is a factor in bronchial asthma?

Dr. Funk (in closing): With regard to the position of the diaphragm in asthma cases: We made a number of observations as to the position of the diaphragm in patients with asthma during the attacks and in the intervals between attacks. During the attacks the diaphragm is depressed and definitely limited in mobility. This is demonstrable by the x-ray and by the observations of the fixation of the costal margins on inspiration. In the intervals between the attacks the examination may show nothing abnormal with regard to the diaphragm or may, if the asthma is of long duration, show depression and sloping of the diaphragm as one commonly sees in emphysema.

Regarding the second question, I do not believe that the disordered function of the diaphragm is the cause of bronchial asthma. It is quite true that we find this structure depressed during the paroxysm and showing evidence of lack of mobility. This may be due partly to spasm and partly to the over-distended lungs. Perhaps in some cases spasm of the diaphragm occurs in association with bronchiolar spasm.

We have not been able to demonstrate any change in the position or movement of the diaphragm in early pulmonary tuberculosis. Our studies along these lines were made following the suggestion of Williams some years ago that early lesions were associated with limitation of the diaphragm movement.

THE CLINICAL INTERPRETATION OF THE PHTHALEIN TEST AND AMBARD COEFFICIENT IN CERTAIN DISTURBANCES OF KIDNEY FUNCTION*†

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Clinical medicine is at present greatly concerned in functional tests and in certain problems of physiological chemistry. This has thrown a very heavy burden upon the laboratories, as it involves work which is exacting and time-consuming. Whether the effort spent in this direction furnishes information which is of real help and worth-while must eventually be answered by the clinician himself. We feel, therefore, that it is of importance to discuss from time to time in such a meeting as this, the methods employed and their relative and ultimate value.

The present discussion is concerned with certain tests ordinarily employed in the investigation of kidney disturbances. In this discussion we wish to call attention first to the fact that it is difficult to predict the exact pathological lesion of the kidney by the so-called functional tests, or from data obtained from the chemistry of the blood and the urine. The reason for this is evident. The structural changes seen and studied in the pathological laboratory represent end results, while the various clinical laboratory tests to which reference will be made, reveal only the degree of certain functional disturbances as the lesion of the kidney is progressing. We have all had our experiences in the study of the nephritic case in finding that our concept of the kidney lesion from the clinical viewpoint was not verified by the postmortem findings. This is evident in much of the literature which comes to our notice now. It should not discourage the clinician, however, in the application of those standard tests which are supposed to reveal the functional capacity of the kidney. It is of far greater importance to the patient for the physician to know just what a kidney is capable of doing under certain stress and strain than to know whether the preponderance of the pathology lies in the glomeruli, in the tubules, or in the interstitial structure. We do not wish to have it implied from this that in a given case a certain definite concept of the pathology of the kidney is not desirable, but we maintain that a knowledge of the functioning power of the kidney will be more likely to point towards the proper course of treatment. The etiology, the history, and the physical signs, together with a certain well-established, frequent routine urine analysis, including microscopical examinations will go further towards establishing a pathological diagnosis than all the functional tests at our command. But just to what extent the lesion at a given time imperils the patient's life can be determined more definitely by certain functional tests. It is this difference of approach between the pathologist and the clinician which accounts for the different classifications of diseases of the kidneys by various investigators and authors.

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†From the Division of Medicine, Mercy Hospital, Pittsburgh.

The real problem, in any given case from a clinical standpoint therefore, is the determination of the functioning power of the kidneys. In this functioning process the kidney eliminates the waste products of body metabolism. These are largely water, nitrogen in its various forms, and chlorides. We mention these in the order of the ease with which their elimination may be studied. One is about as important as the other, but only water and nitrogen elimination will be discussed in this paper.

The comparative increase of night urine and the specific gravity fixation test are usually the earliest and most reliable manifestations of kidney diseases. These tests or observations require very little equipment and skill. It is surprising what little attention is given ordinarily to the disturbances manifested by the frequency of urination and changes in the amount of urine excreted, especially in early nephritis. The busy practitioner sighs for the time and the equipment which will enable him to do the advanced and finer urinary tests, and the teacher and the student are so absorbed with the details of these complex, and in all probability less reliable tests that they find little time to discuss the more simple tests.

Probably the earliest secretory disturbance of the kidney is the occurrence of the more or less frequent night urination. The question of frequent night urination should always be asked of the patient and the reply carefully analyzed. No laboratory equipment is necessary. Another manifestation is the constant increase in the 24-hour output, polyuria, and especially the increase of the night urine over the day. When the night urine is 600 c.c. or over it requires interpretation. And finally, the most suggestive observation is the so-called specific gravity fixation test. The urine is collected in two-hour specimens from 7 a. m. to 9 p. m., and in a single specimen from 9 a. m. to 7 p. m the following morning. The amount and specific gravity of each specimen is noted separately, as in the Mosenthal test, and in the diseased kidney the normal variation will not be seen as it is in the healthy kidney. All that is necessary for this test is a measuring glass, a specific gravity tube, and a little time. This test, when checked with a standard diet and supervised by a competent physiological chemist will also furnish evidence as to chloride elimination, and retention, but this will not be discussed at present.

The above observations with or without a chemical and microscopical examination will furnish evidence that disease of the kidney has begun and is on the way.

The phthalein test and the Ambard coefficient, on the other hand, give very definite evidence of the functioning capacity of the kidneys under the conditions and circumstances they are secreting at the time the tests are instituted. They do not furnish evidence of early kidney disease. In this respect they differ from the tests just mentioned. The percentage of phthalein elimination and the Ambard coefficient both furnish the index of the nitrogen excreting power of the kidneys. The amount of nitrogen, in the form of urea, eliminated by the kidney and the amount of nitrogen retained in the blood at the same time are factors of considerable importance when determining the functioning power of the kidney. The Colorimetric methods developed by Folin and others have gone far towards making these estimations available from a clinical standpoint, but it still requires a physiological chemist to make the results at all dependable. The test developed by Geraghty and Rowntree, the so-called phthalein test, gives us almost identical information, and is much more easily carried out than the urea estimation of blood and urine. It can be done by a competent technician and it is therefore more commonly employed. The amount of phthalein eliminated by the kidney in a given time is a fair and accepted index of the urea eliminating power of the kidney at that time. It does not give the earliest evidence of kidney disease as was said before, such as the disturbance of water secretion does. In fact, a kidney must practically be diseased to the extent of having lost all its reserve functioning power before there is any appreciable disturbance of phthalein elimination. In other words, the phthalein test does not help so much to establish the diagnosis as it helps to reveal just what the kidney is able to do under the existing conditions and circumstances. It has, therefore, greater prognostic than diagnostic value. The same may be said of tests for blood urea and urinary urea.

It is because of the fact that the phthalein test entails comparatively little labor and skill, and that the Ambard coefficient requires the services of a physiological chemist, that it was thought desirable to compare them in a series of cases which is here presented. The diagnoses in these cases were made from the history, physical examination, and repeated urine analyses. In some cases the diagnosis was confirmed at autopsy; in others we found our diagnosis incorrect. But we maintain that this has no bearing on the question under discussion.

TABLE I. SERIES OF CASES SHOWING COMPARISON OF TESTS WHICH AGREE

No.	Name	Age	Diagnosis	Ambard	Phthalein	Total
1	Mr. R. M..	31	Chronic Int. Nephritis	.092	20-15-75	42.5
2	Mr. L. H. .	48	Chronic Par. Nephritis	.13	7-15-10	32
3	Miss E. M.	16	Chronic Int. Nephritis	.09	15-18-12	45
4	Mr. P. N. .	50	" " "	.17	tr.-0-0	.....
5	Mrs. H. L.	59	" " "	.5	0-2-3	5
6	Mr. B. S. .	36	" " "	.071	45-20-15	80
7	Mr. J. S. .	53	" " "	.087	17-17-15	49
8	Mrs. W. P.	52	" " "	.08	20-20-10	50
9	Miss M. A.	60	" " "	.128	0-12.5-5.5	18
10	Mr. H. G. .	56	" " "	.062	35-20-7	62
11	Mr. S E. .	25	" " "	.09	20-15-15	50
12	Mrs. E. G..	56	" " "	.36	8-5-0	13
13	Mrs. G. M.	39	" " "	.15	20-20-4	44
14	Mr. J. S. .	64	" " "	.14	10-5-5	20
15	Mr. J. P. .	56	" " "	.122	13-18-13	44
16	Mrs. J. F..	56	" " "	.09	25-11-26	62
17	Mr. W. S..	63	" " "	.073	25-12-tr.	37
18	Dr. H. C. .	50	" " "	.15	15-18-8	41
19	Mrs. W. R.	46	" " "	.134	25-7.5-0	32.5
20	Mrs. A. P.	49	" " "	.09	22-8-3	33
21	Mrs. A. H.	54	" " "	.11	16-16-6	38
22	Mrs. D. W.	59	" " "	.075	25-20-10	55

It will be seen from *Table I* that the tests parallel each other quite surprisingly, and that the phthalein test must, therefore, represent rather definitely the nitrogen eliminating power of the kidneys. It apparently could take the place of the more complicated chemical tests of blood and urine which furnish the factors for the Ambard coefficient. There is however, it seems to us, a definite advantage in knowing whether there is a nitrogen retention in the blood, and what variations there are under certain conditions. An estimation of the blood nitrogen therefore in conjunction with a reliable phthalein test seems to give us more information than the Ambard coefficient alone does. This will be explained later.

In cases of essential hypertension the phthalein and Ambard tests again parallel each other as is seen in *Table II*.

TABLE II. CASES OF HYPERTENSION

No.	Name	Age	Blood Pressure	Ambard	Phthalein	Total
1	Mrs. J. S.	42	240-120	.059	18-20-6	44
2	Mrs. T. W.	43	215-118	.042	30-20-10	60
3	Mrs. W. P.	52	....	.08	20-20-10	50
4	Mrs. M. J.	60	212-86	.058	40-15-5	60

Also in cases of general arteriosclerosis it was found that the phthalein and Ambard showed the same relative factors.

In our study a series of cases of cardiac decompensation were considered with the purpose of comparing the phthalein with the Ambard. In some the decompensation was due to organic valvular disease, and in others to myocardial disease secondary to, or associated with a chronic interstitial nephritis. In both conditions the two tests did not agree so nicely as in cases where there was no decompensation. We felt that the fault lay largely with the factors of the Ambard coefficient because these were definitely modified by the "estimated amount" of urine eliminated in 24 hours. The phthalein test and the estimation of the nonprotein nitrogen of the blood, however, seemed to furnish parallel factors. There were large variations in the Ambard coefficient, but only slight variations in the phthalein; however when compensation was reëstablished the two paralleled each other again as in the tables presented above. We have not studied enough of these cases to speak definitely of what has just been suggested, and we are not ready now to tabulate our results. We might say it is only an impression which we have gathered from our work.

Of the 33 cases studied with reference to the relation of phthalein and Ambard, 20 cases of nephritis showed similar results, 4 cases of hypertension also showed similar results, but the remaining 7 showed dissimilar results. These are shown in *Table III*.

TABLE III. CASES IN WHICH PHTHALEIN AND AMBARD DO NOT AGREE

No.	Name	Age	Diagnosis	Ambard	Phthalein	Total
1	Mrs. H. Z.	51	Chronic Int. Nephritis	.10	38-15-4	57
2	Mr. A. B. .	53	" " "	.20	15-18-7.5	40.5
3	Miss L. K.	41	" " "	.14	25-20-6	51
4	Mr. T. K. .	65	Chronic Par. Nephritis	.14	40-15-10	65
5	Mrs. C. M.	43	Chronic Int. Nephritis	.105	30-15-8	53
6	Mrs. G. G.	77	" " "	.08	10-10-14	34
7	Mr. W. W..	53	" " "	.16	42-7-tr.	49

We are as confident of our diagnosis in these cases as we were in the others except for this disagreement. The estimations were made a number of times and we feel our results are fairly reliable. We have at present no explanation to offer for this apparent discrepancy. Perhaps it is on account of a certain degree of cardiac decompensation, or on account of an acute congestion of the kidneys.

The matter of prognosis in kidney disease and the question as to the amount of strain to which the kidney may safely be put, such as surgical procedure and ether anesthesia, has also been considered in our study. It is generally thought that a phthalein output of less than 40% in two hours is evidence that the kidney is dangerously impaired. We found many circumstances and conditions which modified this factor. Among these were rest in bed, continuous and uniform body warmth, reduction of proteids in the diet, probably the reduction of sodium chloride in the diet, regularity of the bowels, improvement of circulation in a fagged heart, etc. Attention to such details frequently resulted in an increase of the phthalein excretion. Whether it is practical, therefore, to set such an arbitrary figure as a danger signal is a problem which requires more definite proof. On the other hand we were definitely impressed with the narrow margin of safety which exists in the patient with a decidedly low phthalein, such as 30% or lower in two hours.

A case which demonstrated this was that of a young woman, a school teacher aged 25 years, who consulted us on account of recurring attacks of polyarthritis. She had had four attacks in three years. She also had periodic attacks of peritonsillar abscess. Her family physician had impressed her with the relation of tonsillar infection to arthritis, and a specialist in throat and nose diseases had suggested that she would be better if her tonsils were out. The patient was referred to us to determine the safety of the operation. It was known by the family physician that there was a high blood pressure and that albumin was present in the urine. In our examination we found the blood pressure 205-120, and the urine was 1,006, albumin +++, granular casts, and red blood corpuscles. The phthalein output was 14% the first hour, 6% the second hour, total 20%. After three weeks of rest and the application of such measures as have been mentioned which might increase the efficiency of the kidneys, the urine was 1,008, a trace of albumin, and only an occasional cast. The phthalein was first hour 5%, second hour 4%, and third hour 3%, or a total of 12% as compared with 20% when the patient entered the hospital. Unfortunately the Laboratory of Physiological Chemistry was disorganized at this time, the spring of 1918, on account of the war, and no blood chemistry was done. On account of the apparent failure from the laboratory standpoint to show any improvement, and also because the patient discovered herself as feeling so much better, the physician and her family as well, insisted upon the operation. The blood pressure had dropped to 158-90. The tonsillectomy was done reluctantly and with ether, as the patient refused local anesthesia. The first few days after the operation the patient's condition was satisfactory, but on the third day there was evidence of uremia, and on the sixth day she had repeated convulsions and died.

It is also generally thought that a phthalein output of zero, or a mere trace in two or three hours, is sufficient evidence to predict that the patient is unlikely to survive more than two months. We have had several striking exceptions to this rule.

One case was that of an elderly gentleman with a marked general arteriosclerosis. His phthalein was only a trace in repeated examinations. His mode of life and diet were arranged and the man lived over nine months.

Another case is that of a woman aged 59, with a definite arteriosclerosis and chronic interstitial nephritis. The patient was first seen a year ago. The phthalein has never been above a trace and the Ambard coefficient was never below .50. This patient is still living and appears in better health than a year ago. In a recent examination the results were as follows: Blood pressure 235-110; phthalein first hour 2%, second hour 3%, third hour 8%. The urea nitrogen of the blood was 37.5 mgm. per 100 c.c. and the Ambard coefficient was .33. The physical condition of the patient compares well with a year ago, except for a few scattered hemorrhages in the retinæ, which occurred recently. Our impression is that if the class of patients of which this is a good example follows directions carefully their lives may be materially prolonged. On the other hand, if any stress or strain, as an acute infection or a great grief or an imperative surgical operation overtakes them, they promptly succumb. In conclusion we wish to call attention to the following points which have been impressed upon us throughout this work:

1. It is difficult to predict the exact pathological lesion of the kidney by so-called functional tests or even by urinary analyses.

2. The comparative increase of night urine and the specific gravity fixation test are usually the earliest and the most reliable manifestations of kidney disease. These tests or observations require very little equipment and skill.

3. The phthalein test and the Ambard coefficient give very definite evidence of the functioning capacity of the kidneys in the conditions and circumstances under which they are secreting at the time the tests are made. They do not furnish evidence of early kidney disease, and in this respect they differ from the tests just mentioned. Both furnish the index of the nitrogen excreting power of the kidneys only.

4. The phthalein test requires no chemical skill and entails very little laboratory technique. The Ambard coefficient is the resultant of factors which are best determined by a physiological chemist in a well-equipped laboratory. A

comparison of the two tests is therefore desirable.

5. The tests parallel each other rather closely and are constant in chronic nephritis and also in the kidney of general arteriosclerosis, especially if there is no decompensation.

6. In kidney disturbance due to or associated with cardiac decompensation the phthalein does not seem to show the delicate variations which the Ambard coefficient or the factors thereof show. The phthalein is depressed usually. The blood nitrogen remains constant.

7. While a phthalein elimination below 40% in two hours is evidence of certain kidney impairment, and the elimination of a mere trace in the same time ordinarily predicts an early fatality, our experience shows that there are striking examples of the exceptions to the rule.

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DISCUSSION

Dr. O. H. Perry Pepper (Philadelphia): I had the privilege of reading the paper last evening, and I am sorry that Dr. Lichty did not have the time to present it to you in full. It is the sort of paper that meetings such as this should have presented before them.

Dr. Lichty has pointed out the impossibility of correlating the autopsy findings with the results of tests of kidney function or the results of urinalyses; and also the impossibility of correlating even the symptomatology with the degree of insufficiency of kidney function evidenced by these tests. It is renal insufficiency that these tests evidence. The findings of these tests do not diagnose nephritis, but renal insufficiency. We must keep that in mind. We may find marked impairment of renal function with various diseases, such as prostatic hypertrophy with obstruction; and the removal of the prostate in that condition removes the renal insufficiency, and the tests return to normal. In such a case of prostatic hypertrophy there may be renal insufficiency, but not necessarily Bright's disease. In the case of amyloid disease, there is often no renal insufficiency, but marked damage of the kidney.

I cannot entirely agree with Dr. Lichty in regard to the importance of the night urine and the frequency of nocturnal urination. I think that this is often overestimated. I agree with him thoroughly, however, in regard to the importance of the concentration, or specific gravity, test.

Concerning the phthalein test, the most practical and most useful test that we have, it is true that it is not so simple as it appears. This fact does not discredit its value or the importance of using it; but that we do not understand it, must be admitted. Kendall and Braasch have shown that there are extrarenal factors which tend to hinder its elimination. There are a number of investigations showing that it is not strictly a test of renal function, although indirectly so. That, however, does not militate against its usefulness.

Concerning the urea nitrogen in the blood, there are a number of factors that raise its level, as for example, anesthesia, pneumonia, high protein diet, intestinal obstruction, agonal states, etc. During the latter months of pregnancy, the blood urea nitrogen is usually low and a usually normal reading may indicate a pathological process, because the urea nitrogen at that time is low.

Ambard originally stated that the rate of excretion of urea increases in the normal as the square of the urea concentration of the blood. Since then, there have been a number of studies made, and additional facts modifying that formula brought out. Dr. Lichty has made an original observation that the results with the blood urea nitrogen and phthalein tests will often run parallel in cases with circulatory insufficiency but that the Ambard test does not correlate with the other two. He thinks that this is due to some fault in the factors of the Ambard coefficient. There has recently been published by Austin, Stillman and Van Slyke some work that definitely demonstrates the same thing. The rate of volume outflow of urine is a factor which must be introduced into the original Ambard formula. Dr. Lichty has come to the same conclusion by a different route. I hope that eventually the Ambard formula may be simplified and made of practical value.

Dr. Lichty has presented just the type of thing that we want. There is great value in the application of simple methods to a series of cases. The results obtained carry conviction as to the help to be gained from the use of these methods. Not only has it been of value to him and to his patients, but it also offers us a basis for interpretation of these tests that should enable us to apply them in a more intelligent fashion in the future.

Dr. Lichty (in closing): I want to thank Dr. Pepper for calling attention to the fact of the great discrepancy between our clinical diagnosis and the laboratory findings. That appears in the paper. I do not wish you to feel that we are always quarreling with the laboratory men; yet there is one point on which we do not agree, and that is the "estimated amount" of urine which goes into the Ambard calculation. The laboratory man says, for example, "The estimated amount of urine for your patient is 2,900 c.c.;" but we say, "He voided on the same day only 800 c.c." What can we do about it? If the blood is taken at the time that so much urine was voided in two hours, you cannot get back of it. The laboratory man has the advantage of us, but clinically we do not feel that the Ambard has the advantage that the phthalein test seems to have; and I believe that it will take a great load off our laboratory men, and off us individually, if we use the phthalein test more for clinical purposes. Of course, in well-organized hospital laboratories it is desirable to continue investigations which promise a furtherance of our knowledge of these problems, but for bed-side clinical work for the every-day man the tests should be simplified wherever possible.

AN ANALYSIS OF THE CAUSE OF FEVER IN EARLY LIFE WITH A VIEW TO DIAGNOSIS*†

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PHILADELPHIA

Although fever is but a symptom, and the cause of the fever is the real object of clinical diagnosis, nevertheless fever constitutes the most important single guide to the presence of many diseases, and the continuance of fever inevitably indicates that real convalescence has not begun even when all other indications of disease are lacking.

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†From the Medical Service of the Children's Hospital.

For example, the persistence of even slight temperature during the terminal stages of rheumatic endocarditis is evidence of the activity of the pathological process in the valves in spite of the absence of any other definite clinical signs other than the murmur.

It seemed to us, therefore, that it might prove to be of some practical value to review briefly the subject of febrile diseases in early life by means of a survey of actual patients as they enter the medical wards of a children's hospital.

We have carefully studied the medical case histories at the Children's Hospital of Philadelphia for the years 1919 and 1920, and have selected only those patients who have entered the hospital with fever or who have developed fever while under treatment.

A temperature of 101° F. or over, continuously or intermittently, has been chosen as an arbitrary standard. Some serious febrile diseases practically run their course with less temperature than 101°, notably cases of rheumatic endocarditis. Many other febrile diseases never reach the hospital wards because of their short course, such as the ordinary colds or "grip" of the winter epidemics. The exanthemata, pertussis and mumps are excluded as rigorously as the diagnostic skill of the admitting medical officer permits.

Another source of error occurs because, in the common types of hospital patients, the factors of faulty hygiene, under-nutrition and failure to receive early treatment play an important rôle. Although children in better circumstances will show a larger proportion of mild forms of disease—bronchitis as compared with pneumonia and mild fermentative diarrhea as compared with ileocolitis—nevertheless a survey of the patients in the medical wards of a children's hospital will give a fairly accurate indication of the general morbidity from the more serious forms of febrile diseases in city children, exclusive of the contagious diseases.

GROUPING OF CASES ACCORDING TO INCIDENCE

The histories of 734 cases have been abstracted. The number of cases in the different groups and the percentages of the whole number were as follows:

Group I—*Lower Respiratory Tract:* 332, or 45.2 per cent. Pneumonia: broncho 114, croupous 117, influenzal 15, empyema 10,* serous pleurisy 1, bronchitis 58, influenza 17.

Group II—*Gastro-intestinal Tract:* 96, or 13.1 per cent. Acute (75) and chronic (21) gastro-intestinal disease, usually with diarrhea.

Group III—*Infections of Brain, Cord and Meninges:* 66, or 8.9 per cent. Meningitis: tuberculous 30, meningococcic 17, pneumococcic 6, streptococcic 4, influenzal 2, undetermined 2, chronic basilar 2; encephalitis 2; poliomyelitis 1.

Group IV—*Infections of the Middle Ear:* 63, or 8.6 per cent. Otitis media 61; mastoid* 1; thrombosis of lateral sinus 1.*

Group V—*Tuberculosis:* 56, or 7.6 per cent. Meningeal 30**, pulmonary 16, miliary 6; peritonitis, pleurisy, psoas abscess and pericarditis, 1 each.

Group VI—*Convulsions* (exclusive of meningitis): 31, or 4.2 per cent. (To be considered in detail later.)

Group VII—*Specific Contagious Diseases:* 20, or 2.7 per cent.*** Diphtheria 11, measles 6, varicella 2, scarlet fever 1.

Group VIII—*Diagnosis not Certain:* 18, or 2.5 per cent. (To be considered later.)

Group IX—*Typhoid Fever:* 13, or 1.7 per cent.

Group X-a—*Pyelitis:* 12, or 1.6 per cent.

Group X-b—*Infections of Upper Air Passages:* 12, or 1.6 per cent. Tonsillitis 4; retropharyngeal abscess, rhinopharyngitis and stomatitis, 2 of each; laryngitis and suppurative adenitis, 1 of each.

Group XI—*Endocarditis, Pericarditis and Chorea:* 11, or 1.49 per cent. Endocarditis 8, endocarditis and pericarditis 1, chorea 2.

Group XII—*Miscellaneous Infections of Skin, etc.:* 10, or 1.36 per cent. Furunculosis 2; cellulitis 4; impetigo, bullous erythema, staphyloma cornea and osteomyelitis, 1 of each.

Group XIII—*Premature Birth and Infections of Newborn:* 9, or 1.2 per cent.

Group XIV—*Nephritis:* 8, or 1.08 per cent. Nephritis 7, Hydropyonephrosis 1.

Group XV—*Leukemia and Purpura:* 5, or 0.63 per cent.

Group XVI—*Miscellaneous:* 13, or 1.7 per cent. Intussusception, kerosene poisoning, status lymphaticus, lues, scurvy, 2 of each; glioma of brain, obstructive hydrocephalus and acidosis, 1 of each.

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*Original admissions.
**Duplicate of Group III.
***Eleven of the twenty cases developed in the Hospital.

GENERAL COMMENT

A glance at the case groups shows that infections of the respiratory tract and the acute intestinal disorders comprised 59.6 per cent of what may be called the more serious forms of febrile disease. If to these we add cases of meningitis, otitis, pyelitis, heart and skin disease and the exanthemata we find that over 87 per cent of all the febrile cases were comparatively easy to diagnose by ordinary careful clinical examination, with a minimum of aid from the laboratory other than in the differentiation of the types of meningitis and in throat cultures. Cases which require more careful exclusion in the search for a cause for the fever are those of tuberculosis other than meningitis, convulsions and those in groups XIII, XIV, XV, XVI.

Age: Seventy-five per cent of all the patients were under 3 years of age. Of those with pneumonia, 79 per cent with broncho and 64 per cent with croupous forms, were under 3. The intestinal disorders and otitis media showed 92 and 91 per cent respectively. Over 3 years of age and up to twelve were found the following percentages: pyelitis 50, nephritis 85, typhoid fever 92, and endocarditis 100. The bed capacity of the Children's Hospital on the medical side is 45, with only 19 beds for small babies. The demands for children under 3 have been increasing of late years as compared with those for the older children and these proportions for age are not determined by any discrimination in favor of the younger children.

The following table is of some interest as evidence that various infectious diseases are more common in moderate or warm weather than is usually believed:

Diseases	Cold weather Dec. to March	Warm weather June to Sept.	Moderate weather April, May, October, November
Bronchitis	21	13	24
Broncho and influenzal pneumonia	91	10	25
Croupous pneumonia	46	22	49
Tuberculous meningitis	8	15	7
Other forms of meningitis	8	10	13
Otitis Media	28	18	17

Bronchopneumonia is always more prevalent in cold weather, but that only 39 per cent. of the cases of croupous pneumonia occurred in winter may be somewhat surprising. That so many of all the infections are seen in summer emphasizes the agency of infection *per se*, as compared with the various other factors that used to be considered so important.

SPECIAL COMMENT

The frequent occurrence of otitis media is noteworthy. A majority of the cases were admitted with fever which was due solely to the condition of the ears. As a complication of other diseases, such as pneumonia, otitis media occurred 44 times but, in the latter case, was listed only when it clearly caused a febrile disturbance entirely distinguishable from that of the original disease. The diagnosis was based upon otological examinations and upon the results of paracentesis and its effect upon the temperature.

The specific contagious diseases: Of the twenty cases listed under Group VII, eleven developed in the hospital and nine were admitted before diagnosis was made. Five of the nine were laryngeal diphtheria and were admitted to isolation for study with a full realization of their probable nature.

The difficulty in excluding these contagious cases from hospital wards is greatly increased when physicians fail to give an accurate history of patients recommended for admission. Pertussis occurred as a complication in several cases admitted under these circumstances, but was not recorded because of the bronchopneumonia which accompanied it.

Bronchopneumonia occurred seven times as a complication, once each in cases of indigestion, retropharyngeal abscess, pyelitis and typhoid fever and three times in otitis media. In view of the difficulty of preventing respiratory infections in a hospital this record is not bad and hardly exceeds the "expectancy" for pneumonia as a complication in patients treated in the best home environment.

Convulsions: The diagnosis of the cause of convulsions is not always easy. In most instances it depends upon the "instability" of the nervous system occasioned by latent spasmophilia. So far as exciting causes could be determined we found the following:

Acute infections, bronchitis and pneumonia, 6 cases; gastro-intestinal disorders and constipation, 13 cases; birth injury and infections of the new born, 3 cases; otitis media, 2 cases; pyelitis, 2 cases; tænia saginata and ascaris lumbricoides, 2 cases. Two cases were caused by true tetany and in one no predisposing or exciting cause could be determined.

Undiagnosed Cases: In 18 cases the diagnosis of the cause of the fever could not be made with positiveness. This was due in part to insufficient time for observation and in part to a failure of the clinical and laboratory methods of approach. For example, a negative tuberculin test and persistent failure to discover tubercle bacilli in the sputum in a chronic low grade bronchopneumonia without much loss of weight does not rule out the tuberculous nature of the process but it leaves the diagnosis in doubt, unless the case can be followed for some time.

Nine of the eighteen patients died, but only two came to autopsy, five recovered and four were removed before the completion of the illness. Of the two cases that came to autopsy, one had been diagnosed bronchopneumonia but was found to have atelectasis and nephritis. The other may be detailed at some length:

N. W., male, 5 months old, admitted June 5, 1920. Weight 2.6 kilos (5 lb. 13 oz.), with a history of vomiting and intestinal indigestion more or less continuously since birth. On July 25th he began to run a temperature, from 100 to 103° F., of remittent type, which continued until his death on September 22d. Repeated physical examinations showed only slight enlargement of the axillary and cervical glands, rickets, mild bronchitis and a temporary otitis media (in July). By September 6th the weight was 4.1 kilos (9 lbs. 1 ounce) and digestion was good. Early in September he developed a brassy cough and on September 18th he began to have spasmodic choking spells suggestive of enlarged bronchial glands. Two days later he became stuporous and died on September 22d. All laboratory examinations had been negative—x-ray of the chest, section of excised gland, blood, urine, blood Wassermann, 3 von Pirquet's, spinal fluid, Widal, paratyphoid A and B. At autopsy the brain showed a moist section with injection of the puncta vasculosa, but was normal in all other respects. The thymus was small. An examination of the rest of the body failed to show any cause for death. In view of the autopsy it was believed that the spasmodic seizures might have been due to tetany, although the child had been receiving cod liver oil, but no cause for the continued temperature was found.

Most diseases can be made to yield their secrets to persistent effort. In a few instances however, we face insurmountable difficulties in reaching valid conclusions, but these would be even less frequent were we always able to secure autopsies. There seems to be a tendency of late to rely so much upon antemortem laboratory reports that the importance of autopsies at times is in danger of being overlooked. To be sure, autopsies fail to benefit the unfortunate subject and occasionally they fail to solve the problem, but if they did nothing else, the stimulus to painstaking accuracy in diagnosis which they afford would fully justify them.

DIAGNOSTIC AIDES

The significance of a short illness in a child often is missed, chiefly because febrile disturbances are so common that they are apt to be overlooked or inconsiderately studied. For example, a short attack of a croupous pneumonia or a mild scarlet fever may be entirely misjudged until an empyema or a nephritis are in evidence. Recently a child was brought for consultation on account of "awkwardness." He had had fever and a convulsion 12 hours after birth which had been diagnosed as being of "intestinal origin," since there had been no recurrence after a dose of castor oil. The awkwardness was due to spastic paraplegia. The convulsion had originated in the head and not in the stomach. The history of previous illness, therefore, should be scrutinized closely. We cannot always afford to accept a diagnosis without correlating it with the symptoms.

Again the important initial symptoms are overlooked by the mother, and the case described as of sudden recent onset. Especially is this true of tuberculosis and a history of only a few days' illness may, by careful questioning, appear as a matter of weeks instead of days. Another type of case is illustrated by a boy of three, who had a suppurating cervical adenitis early in December, from which recovery apparently had been complete in six weeks. On January 20th he suddenly had a slight convulsion. The next day he insisted on getting up and remained out of bed every day until February 1st. During this time he was "cross and constipated." Only on careful questioning did it appear that he had been slightly feverish, especially at night. On February 1st he vomited and seemed tired. When first seen on February 2d he showed slight strabismus, and died of streptococcic meningitis on February 6th. The real onset of the disease was marked by the convulsion on January 20th and not by the vomiting on February 1st.

The development or persistence of the symptoms after their inception, therefore, must be carefully elicited. Upon these, even more than upon the physical examination, may rest the diagnosis.

One of the great advantages of pediatric practice is the feasibility of making a complete physical examination. There is no excuse for failure to elicit any obvious finding and rarely will anything be missed if the child be stripped and the examination thorough. It is well to do this even when an obvious disease is present. For example, how often a tonsillitis is diagnosed without examination of the body, when the latter would have disclosed the first traces of a scarlatina.

In view of the percentages mentioned, the greatest interest in febrile cases centers on the lungs. For this examination the child should be either sitting, standing or lying flat, prone or supine. Lying on one side causes such radical pressure changes that interpretation of physical signs may be quite faulty. Beware of diagnosing pneumonia without the presence of râles. The interscapular spaces normally show such a harsh type of breath sound, that it is often misinterpreted as true bronchial breathing. The latter, in early life, is a much finer, less coarse and obvious sound than is the normal breath sound. True bronchial breathing is not always heard over a pneumonic lesion, as in a recent case where breath sounds over the affected lobe were somewhat suppressed, but not characteristic. The consolidation could be clearly determined, however, when the child was made to cough and breathe more rapidly. Not rarely also a pneumonia becomes evident to physical examination only after the crisis has been followed by the redux crepitant râles.

Bronchopneumonia often can be diagnosed

more easily from the clinical picture than from the physical signs. The latter consist chiefly of râles, small and large, but definite areas of consolidation may be lacking. Time alone will distinguish many cases of bronchitis from bronchopneumonia. At the onset, therefore, bronchopneumonia may be feared but not often diagnosed.

Persistent fever in acute gastro-intestinal diseases with diarrhea usually means that we are dealing with the infectious type—true ileocolitis—although the initial temperature of fermentative or "functional" diarrhea often is high and alarming.

The examination of a child with fever is not complete without an examination of the membrana tympani. Otitis media not only is a very fruitful cause of high fever, but it is constantly occurring as a complication during other diseases.

The long intervals between the initial fever and the rash make an early diagnosis of measles difficult. In a good light the examination of the mouth and throat usually gives us the clue from 24 to 48 hours earlier than the appearance of the rash.

In any case where a cause of fever cannot be determined, a drop or two of urine should be examined under the high power objective for pus cells. More than 10 cells on a "high power" field, in uncentrifugated and unsedimented urine is extremely suggestive of pyelitis. Irritation around the urinary meatus must, of course, be excluded.

Finally we may suggest that no diagnosis in a febrile case is really complete without a general examination of the urine and a leucocytic count of the blood. When a leucocytosis is present a differential count should be made. The blood examination requires more time than most practitioners can afford and may be omitted when the diagnosis is clear, as in pneumonia. When the cause of the fever is at all obscure such examination becomes the irreducible minimum.

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DISCUSSION

Dr. Howard Childs Carpenter (Philadelphia): It is a well-known fact that even in healthy children temperature variations occur from slight causes, and the younger the child the greater the variation. The height of fever in children bears very little relation to the severity of the infection. The variability of temperature in children is one of the reasons why the temperature should be taken at intervals not longer than four hours. In regard to taking axillary temperature, the usual method of adding one degree to the temperature is not adequate and unless one degree and four-tenths is added, we can hardly consider that we have the approximate temperature of the child.

When we think of the large number of diseases that cause fever in children we are impressed by the figures that Dr. Gittings has given, showing such a large percentage of all the diseases admitted to the Children's Hospital are infections of the respiratory tract. I have no doubt that many of the febrile cases one sees in hospital wards that get well without a diagnosis having been made, are cases of bronchopneumonia that have un-

I want to emphasize what Dr. Gittings said regarding recognizable physical signs. I think this simply indicates the necessity of our making very thorough and repeated chest examinations. In a few of the cases that come into a hospital and have fever for a day, we must not lose sight of the fact that the fever may be produced by the excitement attending the first night's stay in the hospital.

I want to emphasize what Dr. Gittings said regarding pyelitis. We often make the mistake of having only one urinary examination made, and if we get a negative report, saying the case is not one of pyelitis. Babies can have pyelitis with fever for three or four days before any pus appears in the urine.

I think it well to call attention to the frequency of fever in convalescing children. Children who are convalescing from some disease have temperatures from very slight causes. After influenza, typhoid, pertussis, etc., we must not be in too much of a hurry to make a diagnosis of tuberculosis.

Pediatricians do not give orders to do so and so when the temperature goes over a certain degree; but Pediatricians do give orders to do so and so no matter what the fever may be if the fever is producing adverse symptoms in the patient.

Dr. Alfred Hand (Philadelphia): One of the histories given by Dr. Gittings of prolonged fever in infancy reminds me of a patient in my wards at the Children's Hospital in May and June of this year. This infant was about five months old and had fever (101 deg. to 108 deg.) for nearly two months, without any discoverable reason. All of the laboratory tests, Wassermann, Pirquet, Widal for typhoid and paratyphoid, examination of the blood for malaria and of the urine for pyelitis, and also blood-cultures, were negative. Examination by the specialists showed ears, nose and throat apparently uninvolved. The cerebrospinal fluid was clear and sterile. Examinations of the chest almost daily, in which we had the help of the class of graduate medical students, gave no indication of pulmonary trouble, confirmed by the roentgenologist. Our final diagnosis, mainly by exclusion, was a probable septicemia with infection by an organism of low virulence, gaining entrance through some minute lesion which could not be located. During all this period the infant gained steadily in weight until the hot weather of July when he began to lose rapidly, so he was at once sent out of the city for a change of air.

Dr. Percival Nicholson (Philadelphia): In the course of a disease associated with temperature, it is important to be on the lookout for complications which, not present at the outset, may be the cause of a continuing temperature and the cause of a new febrile attack. Especially should you bear in mind pyelitis and abscessed ears. It is important to examine the ear daily during any severe febrile attack.

Then there are the so-called cyclic temperatures, which run for some three or four weeks, without apparent cause. I had such a case recently, in which all examinations were negative. As the tonsils were of a follicular type, the child was treated with the assumption that the bases of the tonsils were infected and a prompt fall of temperature to normal followed and has remained so since.

OTITIC PHLEBITIS WITHOUT THROMBUS*

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Thrombosis of the lateral sinus has grown in recognition and successful operative cure for forty years and more, since Samuel Ashhurst of Philadelphia operated about 1875, and Zaufal of Prague, V. Horsley, M. Shield, Chas. Ballance and Arbuthnot Lane in London a decade later, began the long list of successful operations, now numbering many hundreds. Americans have continued to do their share, and I was able twenty years ago to cite a large and honorable contribution, since hugely increased, which they have made to its conquest. But study of some of the cases in the published lists must raise a question whether a thrombus was present in all of them. The phlebitis which underlies and causes the clotting in all but the irrelevant marasmic cases, can give many of the symptoms noted; and from the authors' own reports only parietal clot, if any, seems to have been found in many interventions.

Even when total occlusion of sinus and jugular have taken place, there are noted many instances, especially in the records of Ewing Day, of recovery with adequate collateral circulation. The point which I have long insisted upon, that essential differences exist between the cases due to acute otitis as contrasted with the chronic, seems increasingly substantiated; but I believe that we must strive better to recognize the nonthrombotic cases which may do better without operation. This is thin ice; for most surgeons will agree that a sinus and jugular exploration skillfully done should be less likely to injure the prognosis than inaction where a septic clot may be present without any convincing sign that we have more than a phlebitis. Fatal issues hang upon each horn of the dilemma, and who is wise enough to say that the wrong course has actually been taken? Opinions pro and con will be boldly formed and expressed; but the critics are as open to criticism as those upon whom they pass judgment.

Rational boldness must ever be the ideal course, if there be no signs negativing the probability of a spreading infection. Yet, if charity is not far-seeing, wisdom demands that we do not rashly condemn a colleague who feels it better in a case before him to hold his hand, though we may read into it indications for operation, which perhaps were unrecognizable if indeed present at all; nonfebrile cases have been repeatedly met where many of us would naturally have felt that phlebothrombosis could not be present; yet the clot has been found and removed, perhaps in putrid deliquescence from a septic vessel, and the patient successfully given his small chance of recovery. Such operations, even though unsuccessful, may deserve much higher praise for the surgeon than many of our easily-won recoveries. It is almost a pity that the symptoms and stages of sinus phebothrombosis have been so well laid down by Whiting and others that diagnosis may seem inevitably if not easily feasible. "All signs fail" sometimes; and the best of us may have to explore gropingly to learn whether or not the suspected venous inflammation and clot are really present. And where absence of clot may suggest that our intervention has been useless and mistaken, a closer study may reveal the infective inflammation of the vessel-wall that is causing the bacteremia, which blood culture will show, and that requires to be cut off by ligature from the general circulation almost, if not quite as positively, as though it had already formed its septic, breaking-down thrombus. We must bear in mind, then, that the process is generally a phlebothrombosis which may be revealing at the time only part of its nature, but is all too likely to exert its malign possibilities to the full if we do not take every reasonable means at our command to combat it.

Valuable, then, as is the operative exploration of the lateral or other sinus in the ear region, with the removal of all septic material of wall or clot that we find, we must remember that many such cases have been brought to recovery by ligation of the jugular, and other cases by mere such cases have been brought to recover by ligation of the jugular, and other cases by mere maintenance of the recuperative power. We must not rashly trust to any one measure, surgical or medical, and ignore the other means which have been found helpful if not curative. By removing, if possible, the primary focus of infection in the ear and building up the patient's resisting power by food, tonics and saline injections, we can with the more probable success carry out the surgical intervention which best meets the exact demands of the diseased condition encountered.

DISCUSSION

Dr. Ralph Butler (Philadelphia): When we consider the anatomy of the ear and remember that a dehiscence between the tympanum and bulb of the jugular may be present and favor a phlebitis or thrombophlebitis of the bulb, it becomes evident that the location of the lesion is difficult. Obviously an inspection of the lateral sinus will not furnish information of the condition of the bulb. It is often impossible to determine from the symptoms alone whether the phlebitis has or has not produced a thrombus.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

As Dr. Randall has well said, we may have to operate because we are not sure, because it is safer to operate than to wait. However, it is better not to operate until we feel that it is unsafe to wait longer.

Dr. Henry S. Wieder (Philadelphia): Doctor Randall, as I suppose you all know, stands for the conservative type of otologist. I believe he has done more to curb the advance of radicalism, in this city at least, than any other man of whom I know, and I believe in this short paper to-day he has sounded a note in the same direction.

I had the soundness of his teachings particularly impressed upon me during the last winter when I happened to encounter a case along the same line as he has described, an acute case which ceased discharging, and which, when I was called in, had a temperature of 104° and rigors. He was immediately sent to the hospital, as I suspected septic thrombosis. I had blood cultures taken, which were negative. He had a high blood count, but the temperature subsided. In a few days he developed another rigor. This soon subsided. There was no tenderness over the mastoid, no drooping of the canal, but from the discharge I thought it was of a more or less septic type. He then developed an arthritis in the wrist, and in six weeks he had an arthritis of the shoulder. I had blood cultures again taken and they were again negative. The blood count was still high, and on the advice of medical men who said they thought the condition was evidently some focal infection, I opened the mastoid and found a distinct necrosis there. On exploring the lateral sinus, while I did not open it, I found no evidence of thrombosis, so let it alone. The man made an uneventful recovery.

In view of the facts that Dr. Randall brought out, this was a case where radical operation might not have done any harm, but it might have exposed the sinuses to infection, which was thus avoided. We all see many cases that have had mastoid operations performed that I believe do not require it, and I know that we have time and again seen in our clinic cases that have refused operation in other clinics, watched them carefully under the guidance of Dr. Walter Roberts, and they have been spared operation. I therefore wish to add my voice in advocating less hasty operations.

Dr. Benjamin H. Shuster (Philadelphia): A case recently came to the hospital from Doctor Coates' office —a boy about ten years of age who had had a mastoid operation done about four years ago. At this time the mastoid was again inflamed, pus bulging, and there was some fever. Doctor Coates being away I opened the wound, cleaned out the mastoid and within two or three weeks the boy made a fair recovery, except that the wound did not heal as quickly as usual. He was discharged from the hospital in fairly good condition, but a week later returned with a sudden rise of temperature, ranging between 100° and 103° F.

The fact that he had recently had a mastoiditis made me suspect a possible sinus-thrombosis. He was studied from all angles—blood, blood cultures, two spinal punctures,—and all were negative except that the urine showed a marked pyelonephritis. He also had a faint heart murmur. The question was whether these findings were manifestations of a septic focus situated in the sinus—in which case operation was urgent—or whether the nephritis was an independent condition, in such instance operation and anesthetic being distinctly detrimental. Meanwhile the patient was getting more toxic every day and I was quite concerned about his condition. Finally, I took the chance of operation, reopened the mastoid wound and exposed the sinus as much as I could. There was no evidence of clot, but the entire region was congested. I ligated his jugular, and immediately his temperature, pulse and respiration dropped to normal and stayed there for four or five days. Apparently I had checked his infection. After four or five days his temperature began to rise again, and although he showed signs of improvement he was not getting well. Treatment was directed to his kidneys, which had been affected by the anesthetic, and the patient began to get well.

This case I believe shows the danger of waiting for a blood-clot or sinus phlebitis to undergo resolution. I am sure if I had not ligated the jugular the boy would have died. The same holds true about mastoiditis. I see very little difference in the danger of an acute appendicitis which threatens to rupture into the peritoneal cavity, and a mastoiditis with its disorganization of tissue which threatens to break into the cranium or into a sinus which is only a few inches away from the general circulation. There is a little difference in the consistency of the tissues and we may delay longer in a mastoid. But there is no harm in operating if you are careful, and it is dangerous to delay too long.

Dr. Randall (in closing): What I want strongly to insist upon is that the phlebitis is different from the thrombosis, and whether there is a thrombus or not, that very frequently the jugular must be tied and the blood protected against the bacteremia which is shown to be present. Crockett had a large series in which he did not attack the sinuses at all, simply tied off the jugular, and they made a good recovery. But where I feel that a lesion elsewhere is the cause of the trouble, I think consideration should be given to the fact that the phlebitis can clear up very nicely without operative dealing with it.

SYMPATHETIC OPHTHALMIA*

REPORT OF AN UNUSUAL CASE

N. S. WEINBERGER, M.D.
SAYRE

The object of this paper is to add to those reported a case of sympathetic ophthalmia occurring after removal of the injured eye, and a brief review of the literature bearing on this subject. Although enucleation of a potentially exciting eye is regarded as almost a sure preventive of sympathetic ophthalmia there is no doubt that very rarely the morbid process is not entirely abrogated and either continues to act or lies dormant, only to flare up with or without further irritation. This irritation may be in the socket, from the introduction of an artificial eye or the implantation of a ball into Tenon's capsule, and from extraneous sources of focal infection. It is not possible with our indefinite understanding of sympathetic ophthalmia to make a positive assertion in this regard, but its consideration is definitely demanded by clinical experience.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Nettleship reports a case as follows: On May 20, 1879, he operated for complicated cataract in a lad of twenty. The eye was irritable at the time of operation. Ten days after operation the eyeball was enucleated. Healing took place as usual. Twenty-two days after enucleation, blurring and dimness of vision began to be noticed at intervals and the patient reported one week later with plastic iridocyclitis, ending in secondary glaucoma and blindness within six months, in spite of treatment. He reports another case as follows:

February 20, 1879, a man of sixty-seven ruptured his eyeball with a screw-driver. The rupture was situated behind the limbus, and the iris was prolapsed into the wound. The prolapsed iris was cut off and one suture inserted in the scleral wound. Infection developed and the eyeball was enucleated nineteen days after the accident. Healing took place as usual. Twenty-three days after enucleation the patient complained of pain in the sound eye. Examination showed nothing and the patient was sent home. One week later he returned with evidence of iritis which Nettleship attributed to sympathetic influence. After nine months of treatment a fair amount of vision was retained. He reports a third case as follows:

September 20, 1879, a boy of eleven was struck in the right eye with a chip of wood. There was a penetrating wound of the cornea. The eyeball gradually became atrophic and was enucleated five weeks after admission to the hospital. Healing as usual. Discharged October fifteenth. November twenty-sixth patient returned and stated that his left eye had been bad about three weeks. Plastic iridocyclitis was present. One month later patient was discharged slightly improved and never returned.

Case 4: Nagel cites a case, reported by Hugo Müller, of a woman, aged thirty-five, who lost her left eye by smallpox. The eye was staphylomatous and glaucomatous. No sympathetic irritation nor inflammation was present. The eyeball was enucleated. Five days later the right eye began to have attacks of cloudiness and photopsiae. Several months later, cyclitis with increased tension set in with remissions, and iridectomy was performed with complete success. There is considerable doubt in my mind that this was a case of sympathetic trouble and Nagel remarks in his abstract that it is not stated how long the left eye had been blind before excision.

Case 5: Colsmann reported a case of a man, aged thirty-five, who was admitted to the hospital in July, 1874, one day after receiving a perforating wound of the cornea and lens of the right eye. Purulent kerato-iritis with persistent pain ended in excision six weeks after the accident. A few days after excision there was localized pale conjunctival edema at the inner angle of the left eye, with vision down to 15/100 but no ophthalmoscopic changes. Four days later neuroretinitis developed, the yellow spot region being especially affected, with contraction of the visual field. After six months of treatment sight was nearly normal and remained so.

Case 6: Pagenstecher and Genth report a case of a patient, aged fourteen, who received a large wound of the left cornea and sclera with prolapse of the iris and traumatic cataract, by explosion of a glass bottle. Immediate excision was refused. The wound healed but the eye remained congested and painful until excision. Twenty-seven days after the accident it had begun to shrink. A large piece of glass was found in the globe. The wound healed in the usual manner. No trace of sympathetic affection had appeared up to date of excision, and after the operation the right eye was perfectly natural as to sight, accommodation and condition of the pupil. On the ninth day after enucleation the eye showed commencing iritis but no defect of sight. The symptoms increased and gradually all the characteristics of a true sympathetic iridochoroiditis manifested themselves, and against these all treatment was powerless. Active symptoms still present eight months after onset. Vision, nineteen Jaeger with difficulty.

Case 7: H. Schmidt and Nagel report a case of a perforating wound at the outer edge of the cornea by a file, with inclusion of iris, wound of lens and intrusion of eyelash into the anterior chamber. Excision four weeks after injury on account of severe ciliary pain. The other eye was entirely free from symptoms. Wound healed as usual. On the fourth day after excision the other eye became congested and iritis soon followed, though sight remained normal. Under energetic treatment a complete cure followed.

Case 8: Mr. McHardy reports a case of Mr. Brudenell Carter's. An intemperate carpenter, aged thirty-five, received a rupture of the right sclerotic near the outer upper margin of the cornea, from a fist blow. Thirteen days after the accident the eye remained very tender. There was no perception of light. Enucleation fifteen days after the accident. Healing as usual and discharged five days later. No sympathetic symptoms of any kind were present at the date of excision. From his subsequent statements it appears that on the day of his discharge from the ward the other eye became irritable. The onset of sympathetic irritation may therefore be put at about six days after the excision, and twenty-one days after the accident. He did not attend again until a week after his discharge from the ward when (twelve days after excision and twenty-eight after the accident) there was slight conjunctival irritation and watering but vision normal and the iris bright and active. During the next three or four weeks the congestion varied but was never severe and was treated as conjunctivitis during the time he was drinking. Thirty-eight days after excision and fifty-three days from the accident, photophobia and considerable ciliary congestion were present but the pupil dilated widely to atropine. Forty-one days after excision and fifty-six days from the accident, iritis and opacity of the vitreous with wide dull ciliary congestion—vision—perception of light. Readmitted to the hospital. He was discharged two months after the onset of iritis with normal vision. Seen again four months later with vision still normal. Mr. McHardy's remarks upon this subject are well worth repeating here and are as follows:

"There can, I think, be no doubt that the disease of the second eye was sympathetic. The only question which arises is whether the morbid process travelled so far towards the healthy eye as to be out of reach, or was set up in the divided orbital structures by the operation. The presumption is strongly in favor of its having been set up by the damaged eyeball and not by the operation for its removal. There is scarcely room for doubt on this subject in those cases where the disease sets in only a few days after the excision, since it is, I believe, generally agreed that sympathetic inflammation scarcely ever begins sooner than about two weeks after the injury or disease which gives rise to it. In cases like some of those I have mentioned, where the interval was from three to six weeks, it must, however, be admitted that there was time enough for the disease to have occurred as the consequence of the excision, supposing this to be possible; but the following considerations seem to make it improbable that such is the case. If, in consequence of excision of the eyeball, changes could be set up in any of the orbital structures capable of originating sympathetic disease in the other eye, then we should expect sometimes to see the disease coming on at very long intervals, even several years, after the operation, and this I believe is unknown. Again, if the sympathetic disease were caused by the operation of enucleation, we should expect it then to be equally severe and destructive, as in the ordinary cases caused by disease of the other eyeball. This, so far as we know at present, is not the case, for, amongst eight cases of postoperative sympathetic inflammation of which the history is complete, we find that recovery (usually perfect) took place in six, and blindness in only two. This proportion of recoveries is much higher than in the ordinary cases. Then again, in all the nine cases under notice, the excised eyeball was in a state very likely to set up sympathetic disease. And, further, in none did any inflammation of the orbital parts occur after the excision, it being often expressly stated that the parts healed just as usual. It is true that in my own cases the scissors used happened to be loose at the hinge, and did not cut well, and that in Mr. Cowell's case the soft parts of the orbit were probably, in consequence of the eyeball being cut into, rather more disturbed than usual; but we have no reason for attributing to these facts any share in the later events. Lastly, the comparative mildness of the disease when it follows enucleation seems to show that the removal of the damaged eye, even after sympathetic inflammation is already declared in the other, may not be so useless as it is often held to be, and that the improvement of the sympathizing eye which sometimes follows this proceeding is not a mere coincidence, but is really due to a persistently acting cause. Far from weakening our faith in the efficacy of enucleation as a preventive of sympathetic ophthalmitis, the cases now brought forward will strengthen us in insisting upon the very early removal of every eye which is spoiled for useful sight and is likely to set up sympathetic disease.

"In both my own cases the sympathetic disease showed some unusual features. In Case II, although the iritis was mild, extensive and deep, detachment of the retina was present for a time. In Case I, the earliest symptom was failure of sight, and neuroretinitis was for the first few days almost the only change. It is remarkable that in three of the six published cases the disease began in the same unusual manner. In such cases where the earliest visible changes occur in the optic disc and retina, it by no means follows, however, that the morbid process has traveled along the optic nerve. Inflammation of the choroid near to the optic disc generally gives rise to more or less neuroretinitis, and such a choroiditis might be expected if the ciliary nerves were, as is generally supposed, the paths by which the inflammation reached the eye. That the neuroretinitis was in truth communicated from the adjacent choroid and was not primary in the optic nerve, appears all the more probable from the fact that the anterior parts of the uveal tract (ciliary body and iris) almost invariably participated to a very marked extent in the inflammation."

In a series of five cases reported by Cant, Lang, Suker, Sattler and Davis, and reviewed by Sweet in a paper entitled "Metal Ball Implantation in Tenon's Capsule," the author is of the opinion that sympathetic diseases could not be accounted for from irritation of the ball. This seems correct, because in one of the cases cited the iritis set in on the fourth day after operation. DeSchweinitz, in a report of seventy-two implantation operations by fifteen American operators with the escape of the ball in fifteen cases, cites one case of sympathetic trouble described by Suker. No detailed history of this case is given and, as Sweet says, "presumably the operator attached little importance to it," as in a subsequent paper on the value of the Frost-Lang operation he makes no mention of this case and says, "It will be found that in these cases where sympathetic irritation follows either scleral or capsule implantation, the wearing of a shell is frequently a sufficient cause for the reaction." It appears from this that he does attach some importance to the presence of a foreign body in the socket. The irritation of a poorly fitting artificial eye to the sound eye is undoubted, but can in no way be definitely associated with sympathetic disease other than as an accessory foreign irritant. The conjunctival and ocular irritation produced by a poorly fitting prosthesis is not sympathetic disease, and such irritations often are the manifestations of adjacent or remote foci of infection and a variety of local and extraneous systemic and constitutional irritants. In a review of two cases reported by the English Committee on Excision, the opinion was expressed that in neither case could the operation (enucleation) be in any way to blame for the sympathetic trouble, one case being very doubtfully sympathetic and the other coming on three days after excision.

Gifford seems to be in accordance with the general consensus of opinion, since in a comment upon an analysis of cases following the various substitute operations for enucleation, he significantly implies that sympathetic disease would probably have occurred if a simple enucleation had been performed.

Zentmayer reported a case before the Philadelphia College of Physicians on March 17, 1900. Plastic inflammation developed fifty-two days after enucleation of an eye injured by an exploding dynamite cap. It ran a mild course and fully recovered. Full data on this case were not available and as far as I know this is the longest interval following enucleation of any reported, excepting a case of Stephenson's cited by DeSchweinitz in which the interval was fifty-three days.

Following is the report of a patient at the Robert Packer Hospital:

D. P., aged thirty-five. Right eye injured February 20, 1920. Injury consisted of rupture of the eyeball in the upper inner quadrant, with some prolapse of vitreous and presentation of a portion of the ciliary body. There was considerable hemorrhage. Rupture was almost concentric with the limbus, about three-eighths of an inch in length. The prolapsed vitreous and uvea were cut off, a dressing applied, and the treatment was expectant. No infection occurred, but after thirty days of care the wound was still open and the eyeball remained irritable. There was no light perception and enucleation was advised. The good eye showed no irritative symptoms and vision was 6/5. Enucleation was performed March 23d, and the edges of the conjunctiva brought together with three sutures. Recovery was uneventful and the sutures were removed on the fifth day. Twenty-three days after operation an artificial reform eye was placed in the socket and two days later the patient returned with the characteristic clinical picture of sympathetic inflammation. The artificial eye was removed and the patient placed upon the Gifford treatment. The attack seemed to be less severe than is usual in sympathetic disease. Dr. Zentmayer saw this case in consultation and agreed with the diagnosis, recommending in addition to the treatment the removal of his tonsils. This was done. His recovery has been complete, and he was discharged from the hospital September 14th, with vision 6/5. Vision to date has remained 6/5. The eye is quiet, and the iris is free. Whether or not the introduction of the artificial eye was merely a coincidence remains uncertain. It was not an exciting factor but might be regarded as a contributory irritant.

We cannot doubt that sympathetic inflammation in a previously sound eye does rarely follow enucleation, but in some cases observers have gone too far in taking the sympathetic nature of the disease for granted. Fuchs says, "The fact that an eye has been destroyed through traumatism by no means justifies us in regarding, without further proof, any subsequent disease of the other eye as sympathetic." The enucleated eye must have been a potentially exciting eye, that is, almost without exception there is present an iridocyclitis of traumatic origin. No authentic case of sympathetic disease in which these conditions did not exist following enucleation has been reported. Granting the presence of an exciting eye, is the operation of excision in any manner an indirect factor in the encouragement or production of sympathetic disease? Sympathetic ophthalmia is fundamentally a uveal disease, no matter what its nature and mode of transmission, and the exciting elements were present in the eye before its enucleation. It is probable that the morbid process had extended beyond the eyeball and was not entirely eliminated by its removal, and there being no definite time of transmission, the time of appearance of the disease in the sound eye would be indefinite. According to Fuchs, the point of time at which there is the greatest danger of the transmission if inflammation exists, is when the iridocyclitis in the injured eye is at its height, usually about four to eight weeks after injury. In none of the cases reported was enucleation performed within two weeks after injury, in fact not until the shortest known time in which the disease can develop had elapsed. It is possible, in a given case where the transmission had already progressed beyond the limits of operation, that any added irritation, no matter of what sort, might be a contributory or encouraging factor toward the development of the disease in the sound eye. On the other hand, since enucleation is almost a sure cure for symptoms of irritation (they being reflex) and almost surely prevents inflammation, we can reasonably conclude that sympathetic disease would have developed without enucleation and that the operation served rather to lighten the attack than to encourage it. Clinical evidence seems to bear this out, as the cases reported were much lighter than is generally the rule in sympathetic disease, probably because further emissions of impulses from the exciting eye for the production of inflammation were prevented by its removal. This consideration does not conflict with the possibility of any foreign irritation, whether local or constitutional, being a contributory factor. The period of time between enucleation and the appearance of the disease varies within wide limits, and depends upon the severity and character of the exciting disease, the resistance of the tissues and the presence or absence of contributory or foreign irritants.

We can fairly conclude that the morbid process in the injured or exciting eye is the origin and real cause in these cases following enucleation, and that the period of time of its transmission to the sound eye varies greatly in different cases. It seems well, however, to avoid all sources of foreign irritation of the nature stated previously in this paper for a period of eight weeks in all cases where the enucleated eye was at the time of operation the seat of traumatic iridocyclitis, and the ten-day period of safety following injury had elapsed.

Robert Packer Hospital.

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DISCUSSION

Dr. George H. Cross (Chester): The excellent vision obtained following this man's recovery, which the essayist states is 6/5, is in accord with the report of the Committee of the Ophthalmologic Society of the United Kingdom, "That after such removal of the injured eye the progress is much better than where the sympathetic disease has appeared before the removal of the injured eye. Of the whole group, 60 per cent recovered good vision."

Personally, I do not see how the introduction of an artificial eye, in the light of the present conception of the etiology, could in any way have influenced the onset of the active process, as it was introduced only two days prior, whereas the original injury occurred 53 days before. It was just a coincidence.

Harbridge, in the same journal, quotes the same committee report. "Sympathetic iridocyclitis followed from one to twenty-one years after the enucleation." Snell observed one case 106 days subsequently.

Among the more recent literature on sympathetic ophthalmia, there is a very interesting article by Herbert Moulton, read before the Section on Ophthalmology of the A. M. A. in 1920, in which he reports four cases which were treated by large doses of sodium salicylate.

In 1917, before the same section, a very exhaustive paper was read by Alan C. Woods on "The Anaphylactic Basis of Sympathetic Ophthalmia," in which he states, "The theories offered in explanation of sympathetic ophthalmia fall in three groups:

"1. The theories which explain the disease through ciliary nerve reflexes. These theories may be dismissed without comment.

"2. The theories which assume that the disease is bacterial in origin, through bacterial metastasis from the exciting to the sympathizing eye, either through the blood and lymph channels, or by the actual migration of the bacteria along the optic tract. Rosenow and Deutschman have extensively elaborated these theories. The objections to these theories are many.

"3. The cytotoxic and the anaphylactic theory. According to de Schweinitz, quoting Gifford, this theory was first advanced by Brown Pusey and later elaborated by Golowin in 1909 and Elschnig in 1911."

I feel sure that the great majority of us agree with Doctor Weinberger in the use of sodium salicylate after the method of Gifford as the most important and satisfactory treatment.

The demonstration of a spirillum in perforating injuries of the globe has led some to the use of salvarsan; while mercury used in the form of cyanide injections or by inunctions, and internally the bichloride, is advocated either alone or together with the salicylates.

Arnold Knapp, speaking of treatment, says: "It is true that in cases of serous sympathetic iridocycltis, the attenuated form, the patients usually get well, and it is hard to say how much treatment helps. At any event we do not know in what way either mercury or sodium salicylate acts in these cases."

Referring to the case Doctor Weinberger reports, it has always been my practice to cover in wounds of the globe by a conjunctival plastic as quickly as possible, to prevent possible infection and promote healing.

Dr. Michael V. Ball (Warren): I should like to ask whether the essayist would recommend the removal of the tonsils in sympathetic ophthalmia?

Dr. S. Lewis Ziegler (Philadelphia): The visit of a former patient to my office yesterday, who was treated by me for sympathetic disease when I was a resident at Wills Hospital thirty-three years ago, suggested the thought that it might be of interest to report the details of this case.

There was an injury to the left eye. The patient was under treatment for probably a month and then went home, but returned with a suspicious sympathetic irritation in the right eye. Enucleation of O. S. was at once performed and O. D. soon cleared up. Later he had a real attack of sympathetic ophthalmitis in O. D. We did not use salicylates in those days—they were unknown; but by analogy I used oil of turpentine. This was a remedy often employed by Dr. McClure, a member of the Wills Staff, in certain cases of chronic iritis, and it seemed to me that in this particular patient the use of turpentine might have a marked influence for the better. He recovered under the turpentine very rapidly and the eye cleared up so that there was only a slight glueing of the iris at one point, which was freed by a subsequent iridectomy. The eye has retained its vision ever since—20/100. The refraction is practically unchanged. He wears S—1.D; C—1.D; AX 180°; 20/70. For near he can read without any glasses J—3. I verified his refraction yesterday. He has reported at intervals of five years and there has been no change in the interior of the eye during all these years.

As to the etiology of these cases, I think we get a reflex sympathetic action in the injured eye and a localized chemotaxis in the sympathizing eye. Then whatever develops afterward in the sympathizing eye is the result of this perverted chemistry. That is why we get improvement from massive doses of salicylates. They have a corroding action. Externally we use salicylic acid to remove corns or to remove the rough skin of icthyosis. When you take it internally it has a localized corrosive action on selected tissues and at the same time neutralizes certain toxins. In the same way turpentine has an oxidizing influence on toxins and lymphstasis. Hence we use it in typhoid fever to relieve congestion and chronic ulcer of the intestines. It is possible that a similar action takes place in sympathetic inflammations.

There is a third way of getting our result, and that is by changing the lymph secretions through the injection of certain serums, like antidiphtheritic serums, or antistreptococcic serum or the phylacogens. These all have a stimulating effect on the biochemistry, and I think that is an important point in therapy.

Dr. Lewis H. Taylor (Wilkes-Barre): If I might streptococcic serum or the phylacogens. These all have factory time to treat a sympathetic ophthalmia is before we have it. I quite agree with what has been said in regard to early enucleation of the injured eye. If an eye is so badly injured that restoration of sight is impossible it would be far safer that that eye be enucleated. This was advocated years ago by Doctor Theobald—that the totally blind eye was a dangerous eye, and that if there is a chance to save the eyeball, even if we do not save the sight, it is liable to infection. I believe it would be better in many cases if such eyes were removed.

A number of years ago Herman Knapp read a rather startling paper before the American Ophthalmological Society in New York, citing a case in which the injured eye was not removed, although sympathetic ophthalmia was suspected, whether because the patient objected or for other reasons, I do not remember. But in that case the uninjured eye went on to complete blindness. The injured eye, that apparently had no vision, recovered, and the patient had a considerable amount of vision in that eye; but in the other eye the vision was entirely lost. I doubt very much, after sympathetic ophthalmia has developed, whether removal of the injured eye has very much effect. In my own experience it has not.

If the injured eye has been removed before sympathetic ophthalmia has developed (and in some of these cases that have been mentioned five or more years after sympathetic ophthalmia or something develops), and the eye becomes very much inflamed and the vision is lost, it is a question in my mind whether that should be classed as sympathetic ophthalmia. Other things may happen, plastic iritis, etc., and it is doubtful whether that is a true sympathetic ophthalmia.

Dr. Weinberger (in closing): In regard to the question whether I would advise removal of the tonsils in sympathetic ophthalmia: absolutely no. They bear no relation whatever in my mind in this disease.

What was the longest time you found in the literature, Doctor Cross? Twenty-one years. I searched the literature very thoroughly, but of course I missed some things, probably a good many. I do not doubt that there are cases of sympathetic disease that have developed after enucleation that have never been reported; but, on the other hand, I do not doubt that a great many have been reported that were not sympathetic, just as Doctor Taylor says. I think we have to be very careful, and simply because an eye that was injured is removed is no reason why there should not be subsequent uveal disease of the other eye. This should not be regarded as sympathetic trouble, because there are a great many causes of uveal disease.

TUBERCULIN THERAPY IN SURGICAL TUBERCULOSIS*

H. A. McKNIGHT, M.D., and
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Surgical tuberculosis we define as that form of the disease which attacks the lymphatic nodes, bones, joints, peritoneum and the urogenital system, or in other words, the condition produced by the tubercle bacillus for which we sooner or later must operate.

In this so-called operable form of tuberculosis we have found that the administration of tuberculin has been most efficacious in producing results far superior to our operative results, and as our experience in its use increases we are less prone to advise operation in this class of cases.

The late Dr. John B. Murphy, than whom there has been no more eminent surgeon and pioneer investigator in all branches of medicine, has said, "Tuberculin is one of the most potent remedies if properly administered and supervised, but one that is alarmingly destructive if improperly used: there is no mediciment in the entire range of therapeutics where the patient's individual equation must be so accurately estimated and tested to obtain the best results, as in the administration of tuberculin." Again, shortly before his death he said, "We all know how poor are the operative results in tuberculosis of the glands, bones, and intestines. We extirpate a local manifestation of a constitutional disease, and it returns immediately, and then, to cover our lack of curative methods, we banish the patient to the West, to die or be crippled, by a continuation of the condition which we have only been scratching and not eradicating."

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Tuberculin alone will limit and in many cases cure surgical tuberculosis, because its action is constitutional rather than local. It produces an immune response which is antitoxic and antibacterial.

It yields no response when injected into the nontuberculous, but may produce a very marked reaction in those suffering from the disease. Like a vaccine, this reaction may be general, local or focal. It follows from too large a dose, too frequent injections of small doses, and from small or large doses given at long intervals and not increased in amount each time. This power to react to tuberculin in the tuberculous we call sensitiveness or hypersusceptibility.

Hypersusceptibility to tuberculin simulates the anaphylactic reaction so often seen in the continued injections of foreign sera or albumins. When foreign albuminous substances are injected into the organism no immunity is produced, but a hypersensitiveness follows. Albuminolysins are formed which break up the albumin molecules and set free by lytic action endotoxic substances.

According to Wolf-Eisner the tissues of a patient suffering from tuberculosis produce a specific antibody capable of breaking down the tuberculin molecule with the formation of toxic products. This antibody he calls tuberculolysin. The bacterial protein of tuberculin is split up and changed by the chemical action of the bacteriotrophic antibody or bacteriolysin and a lysinized tuberculin is produced which is more toxic to the host than the original tuberculin.

Dr. Ellis Bonime, in his work on "Tuberculins and Vaccines," states in detail the action of tuberculin on the cellular structures as follows: At the point of injection the tuberculin meets with tissues containing bacteriolysins and tubercle-antitoxin. Some antitoxin is formed by the process, but not sufficient in amount to produce the immune response required for a cure. There is a chemical affinity and junction between these bodies, and as we increase the amount of tuberculin injected, more bacteriolysin and antitoxin is called for than there is present at the point of injection, to neutralize the tuberculin. Leucocytes are brought forward by the chemotactic attraction to produce the further required antibodies and complement. During this process some tuberculin is fixed, some gets into the blood and is combined, and some reaches the tuberculous focus, where the same reaction occurs as happened at the point of inoculation. At the focus the union of the tuberculin with the amboceptor-bacteriolysin removes from the neighborhood of the bacilli themselves a considerable inhibitory influence. The bacilli, therefore, increase and turn into the circulation a larger amount of toxin. This gives rise to a slight general reaction and the formation of more antitoxin. The antibacterial substance is formed only in the vicinity of the bacilli, but the antitoxin is formed wherever the tubercle-toxin penetrates. This toxin is usually neutralized, and only after a reaction is it in excess and allowed to exert its action before sufficient new antitoxin is formed. Each successive injection of tuberculin increases the bacteriocidal substance until a great excess is present, and the growth of the bacilli is inhibited. If, however, the drug is too rapidly injected, or in too large doses, it produces fatigue of the tissues making these antibodies. The tissues become exhausted or refractory and an increase of toxin is formed, without the antidote following."

The important factor in the healing power of tuberculin consists in the gradual insensitibilization of the organism to the tubercle-toxin by the establishment of a tolerance to gradually increasing doses of the mediciment. This must be nicely adjusted in every case as there is no rule of thumb in the administration of this remedy. Some sensitiveness must be maintained because it is this property in the tuberculous patient that activates the tuberculin. If the tolerance rises too high the drug is not activated; and if the sensitiveness rises too high or the tolerance falls, marked reactions will occur.

The local reaction is manifested by a painful swelling, redness and induration at the point of injection; this is temporary in character, lasts a day or so, and is of no significance.

A focal reaction is marked by a transitory increase of inflammation in the tuberculous area. This reaction is of great benefit as it produces an hyperemia in an anemic area, increases the formation of granulations and fibrous tissue, and aids in nature's methods of walling off and limiting the tuberculous infection.

The constitutional reaction is more severe as there is a disturbance of the general health. The patient may have headache, chills, malaise, nausea, vomiting and an increase in temperature. This condition lasts for a day or two and then rapidly subsides. If this reaction occurs early in the administration of tuberculin and is severe, great care should be exercised in increasing the dose, as the reaction leaves the patient more susceptible to further increase in dosage.

The methods of administering tuberculin are threefold: (1) The reactive method of Kock, (2) the nonreactive method of Wright and (3) the combination of the two.

In the reactive method the dose is sufficient to cause a constitutional reaction. This same dose is continued at three- or four-day intervals, producing the same reaction each time. This results in a fall of tolerance, an increase in sensitivity and the patient rapidly fails.

The nonreactive method consists in giving small doses every third or seventh day. The same dose or a slightly increased one is given, but never rising to the point of reaction. If this method is continued for any length of time the hypersusceptibility rises, due to the fact there is not sufficient tuberculin given to stimulate a rise of tolerance and, as a result, reactions occur.

We give small initial doses, increased according to the amount of hypersusceptibility of each individual case. This is the method of Bonime and the explanations of its use and the bacteriological methods of producing the immunity are his. The tuberculin is started with a dose less than is required to produce a toxic effect, and this dose is increased in proportion to the increasingly acquired tolerance of the patient. The first dose produces no reactive effect. It requires more tuberculin to reach the amount of maximum tolerance at each succeeding dose, and the succeeding doses, while larger in amount, have no effect if the rise of dosage is gradual and according to a definite plan. This initial dose is increased by a definite amount for two injections, and then on the third injection the increase is increased by the original factor, thereby gaining on the patient's maximum tolerance.

Volumes have been written on the merits of certain preparations of tuberculin, each author claiming certain qualities for his preparation and condemning all others. It is, however, at the present time the consensus of opinion that all tuberculins will produce the results desired if administered in the proper way. It is much better to use one preparation and stick to it, and, if reactions occur, change the dosage rather than the make of tuberculin.

We make our dilutions in the following manner: 0.1 c.c. O. T. is added to 0.9 c.c. of ½ per cent carbolic acid sol. = Dilution 1. 0.1 c.c. Dilution 1 added to 0.9 c.c. of ½ per cent carbolic acid sol. = Dilution 2. 0.1 c.c. Dilution 2 added to 0.9 c.c. of ½ per cent carbolic acid sol. = Dilution 3. 0.1 c.c. Dilution 3 added to 0.9 c.c. of ½ per cent carbolic acid sol. = Dilution 4.

The first dose in each dilution is 0.1 c.c. This is increased in the second dose by 0.02, making the second dose 0.12. The third dose is increased by the same amount and is 0.14. The next dose is measured by increasing the increase; this makes the increase of the fourth dose 0.04 and added to the third makes the fourth dose 0.22. This amount is repeated in the fifth dose, and the sixth is increased by 0.06.

In other words, with the factor of increase at 0.02 c.c. this is given for two doses, then the factor is increased by itself on every third dose. This increase of dosage continues until a cubic centimeter of the first dilution is reached, when the next dilution is started and run up in the same manner as the previous one. When the dose has advanced to pure tuberculin, it is doubled in the amount injected to make sure of the tolerance. The bacillary emulsion may then be started and increased in the same manner. A few patients may not be able to tolerate this high concentration of tuberculin and their limit of tolerance may fall below the pure filtrate. Their optimum dose may be defined as the maximum amount of tuberculin which can be tolerated at any particular moment without producing any ill effect or any prolonged or recurring constitutional reactions. This is not the same in all cases but is an individual factor for each separate case. The remedy should be given twice a week, so arranging the time that the increase of the increase will fall on the longer interval.

Tuberculosis of the lymphatic nodes represents a primary stage of the infection and consequently it follows that this form of the disease offers an ideal stage for observing the efficacy of the tuberculin in checking the disease. Its action can be followed and the dose regulated by the diminution in the size of the nodes.

Tuberculous nodes may be closed or open. Closed nodes may progress by hyperplasia, softening and caseation, or by fibrosis and healing by scar tissue formation. In the hyperplastic variety there is infiltration of the stroma, cutting off the blood supply and liquifaction necrosis and softening of the center of the node. The node acquires a tryptic ferment which digests the capsule and, pointing to the surface, evacuates the node. Under tuberculin treatment this process is hastened, the node becomes soft and red and usually does not open but diminishes in size and finally disappears, leaving a small nodule of fibrous tissue. If the skin covering the node becomes thinned it may be evacuated by repeated aspirations or by a small incision.

Fibrous nodes are found in those individuals who have a fair degree of resistance and react to the tuberculous infection by a fibrous tissue formation. Tuberculin in these cases increases this fibrous tissue formation and hastens the cure.

Open glands are of two varieties: (1) those broken down by the aforementioned tryptic digestion, and (2) those broken down by a mixed infection. Under tuberculin administration the sinuses of open glands soon dry up and close. A mixed infection can be more rapidly cured by an autogenous vaccine in conjunction with the administration of tuberculin.

The initial dose of tuberculin in nodal tuberculosis is not a fixed one. Some cases are more susceptible to the remedy than others. Closed glands may be started with .0001 c.c., or .1 c.c. of the third dilution. If no constitutional reaction follows this dose it may be carefully increased and continued to the higher doses. If a reaction follows, this initial dose must be markedly reduced to an amount which will produce no reaction and then gradually increased. Patients with open or discharging nodes and with recurrences following operation are more sensitive to tuberculin than those with the closed variety. These cases should be started with a beginning dose of .000001 c.c. or .1 of the fourth dilution.

Too much attention has heretofore been paid to the local condition in nodal tuberculosis and the surgical extirpation of the diseased nodes has been considered all that was necessary. The radical operation, as we all know, is not always a success and local recurrences are frequent. No matter how thoroughly we may remove the diseased tissues we fail to remove the organisms, and we have a patient with discharging sinuses and still tuberculous. We reduce the natural resistance of the patient by our trauma and the anesthesia and we also increase his sensitiveness to the toxins of the disease by our operative procedures.

Surgery at times must be used even after a course of tuberculin because the resulting deformities of secondary infections implanted upon the original tuberculous process will not disappear under tuberculin treatment. These secondary processes will be modified, however, by the treatment, so that if surgery must be used it will be local surgery done mostly for cosmetic purposes on a patient with a high degree of resistance and under local anesthesia. There will also be the added assurance that there will be none of the recurrences so frequently seen at the present time in gland and bone involvement.

Bone and joint tuberculosis stands next in importance to tuberculosis of the lungs as regards the number infected and the grave economic losses suffered. It is second to none in the chronicity and gravity of the attendant deformities produced. The pathology is that of an anemia of the parts involved. This is partly responsible for the long-drawn-out course of the disease. The circulation, on this account, is unable to bring to the part the products of the immune response which are normally present. Tuberculin, by producing a focal reaction, floods the diseased parts with antibodies and carries away the broken-down tissues.

Our results in bone and joint involvement have been excellent. Tuberculous dactylitis clears up quickly under tuberculin, the finger assumes a normal size, pain disappears and in all our cases there has been no resulting loss of function. We have treated several cases of extensive tuberculosis of the wrist joint. Our only aim in these cases is to produce a stiff wrist and a subsidence of the active process. This we have accomplished. The patient has also gained in weight and strength. When we are dealing with changed structures we must rely on orthopedic apparatus. Tuberculin cannot restore such deformities. When the lesion is purely tuberculous great improvement can be expected from the use of this remedy, but when secondary changes have taken place other remedial measures, as splints or vaccines, must be used. Surgery has little to offer in these cases, it is mutilating, ineffectual and does not wholly eradicate the disease.

The degree of sensitivity in bone and joint tuberculosis is opposite that found in nodal involvement. The closed variety of the tuberculous process is limited to and around the joint and is purely tubercular in character and remains more or less circumscribed. This form has a greater degree of hypersusceptibility than the open form. It is necessary to exercise greater care in the closed variety than the open, in those cases in which tuberculin is used. The dose is as follows: In the open form the initial dose should be the first dose of the fourth dilution or .0001. In the closed variety the dose should start with .1 of the fifth dilution.

Tuberculosis of the peritoneum treated with tuberculin heals more rapidly than tuberculosis of any other tissue of the body, because it is a pure tuberculous infection. We have been content heretofore to operate in these cases, doing a laporatomy and closing if the disease is generalized. Not all cases are cured by this method and it becomes a problem after operation how to further the cure. Most patients immediately fill up again with fluid and we are soon at the point we were before operation. One entrance of air does very little good. We have found that on the administration of tuberculin the improvement is so marked that in many cases no operative procedure is necessary.

These patients are freed from pain, gain in weight and strength, the masses subside and finally disappear. They are very tolerant to the remedy and rarely show constitutional reactions. They may be started with the third or fourth dilution.

Our experience in treating tuberculosis of the genito-urinary tract has been limited to cases with involvement of the testis and epididymis and one case of involvement of both kidneys, bladder and seminal vesicles. This case is still under treatment. He has gained five pounds in weight and is free from pains and inconvenience. In these cases with so great an involvement great care must be taken in starting with a high dilution and all reactions must be avoided until a high tolerance is built up.

The after-treatment of all cases is important. After a full course of tuberculin, as described above, the patient should not be released from medical supervision. He should return every three months for a test dose to discover if his tolerance is still being maintained. If there is a reaction to pure tuberculin the remedy should be resumed with a dose one-tenth the strength of the one producing the reaction.

General methods of personal hygiene should not be neglected. Infected tonsils and teeth should be removed. Good food and fresh air should be insisted upon, and where deformities exist splints and casts should be used.

. Surgery alone will not cure tuberculosis; but if some surgery is necessary, and we will wait until we have eliminated the hypersusceptibility with tuberculin, and then limit our surgery to the treatment of the resultant local tissue changes, we will be rewarded with a commensurate degree of success in the treatment of this disease. We will be aiding nature in limiting the disease, in building up a natural resistance, and our subsequent surgery, if necessary, will be local, non-disfiguring and more successful than that practiced without the aid of this remedy.

CASE REPORTS

Patient S. Age 15. Cervical adenitis. Duration of treatment, 7 months. Gain in weight, 9 pounds. Condition at end of this time: glands have disappeared; small fibrous nodule left. Has had no general reactions. Highest temp. during treatment, 100 4/5.

Patient Y. Cervical adenitis recurring after operation. Inguinal and axillary adenitis. Postoperative discharging sinuses. Treatment for 7 months. Gain 4 pounds. Sinuses have all closed, glands have disappeared. Has had one general reaction. Highest temp. 100 2/5.

Patient M. Cervical adenitis, markedly fluctuation. Treatment for 5 months. Gain 12 pounds. Glands have entirely disappeared. No reactions. No temperature.

Patient G. Cervical adenitis markedly fluctuation. Treatment 5 months. Lost 7 pounds. One reaction, with temp. 100. Glands rapidly disappearing. Still under treatment.

Patient L. Tuberculous dactylitis. Index finger, size of banana. Treatment 6 months. Gain 7 pounds. Finger normal size; free motion.

Patient T. Tuberculosis of wrist joint, involving all carpal bones lower end of ulna radius and four metacarpals. Markedly swollen and tender. Treatment 11 months. Gain 6 pounds. Wrist now normal in size, ankylosed, no pain or tenderness. No reactions except focal ones in wrist.

Patient B. Mediastinal glands. Treatment for 5 months. Gain 16 pounds. Gain in appetite and general well-being. No reaction. No temperature.

Patient C. Cervical nodes. Treatment 5 months. Gain 16 pounds. No reaction. Nodes now one-fifth original size.

Patient B. Tuberculoma hepatic flexure. Colon operated. Mass found size of a grape fruit. Treatment 4 months. Gained 8 pounds. No pain. Diminution in size of tumor to one-third original size.

Patient J. Tuberculous tests. Treatment 4 months. Gain 4 pounds. One general reaction, temp. 100. Several focal reactions. Tests markedly diminished in size.

Patient B. Cervical adenitis. Postoperative treatment 4 months. Gain 7 pounds. No reaction. Mass disappeared.

Patient L. Tuberculous osteomylitis. Treatment 11 months. Gain 7 pounds. Has been operated three times. No pain. Sinuses closed. Marked improvement in general health.

Patient M. Tuberculosis wrist. Treatment 3 months. Lost 8 pounds. Pain has gone. Sinuses closed.

Patient H. Cervical nodes. Treatment 6 months. Gain 1 pound. No reaction. Glands one-third original size.

Patient B. Tuberculosis both kidneys, bladder, seminal vesicals. Treatment 2 months. Gain 6½ pounds. No pain. No incontinence. Lessened frequency of micturition.

Patient C. Cervical adenitis. Under treatment 6 months. Gain 5 pounds. No reactions. Glands gone.

Patient L. Dactylitis. Treatment 6 months. Gained 8 pounds. Finger normal in size. Motion still limited.

Patient Y. Cervical nodes. Treatment 5 months. Gained 4½ pounds. Swellings gone. No general reactions.

Patient C. Cervical nodes. Operated twice. Under treatment 4 months. Gained 5 pounds. Swellings have disappeared. No reactions.

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DISCUSSION

Dr. John H. Jopson (Philadelphia): I am very much interested in this paper of Dr. McKnight's and Dr. Trager's, and I think it is a very valuable one and they are doing a very valuable work. I think we are all agreed that the operative results in surgical tuberculosis leave a great deal to be desired; in adults this is especially true. There is one class of surgical tuberculosis cases that I would make an exception, that is lymphatic tuberculosis of childhood. I believe that these cases represent a very limited degree of susceptibility to tuberculosis and when the primary focus and the glands, which are secondary, are removed, that these children are cured and usually remain cured and go on through life as healthy as the individuals who have never had any form of tuberculosis. It has been my privilege to operate on a good many children for this condition, some whose fathers were members of the medical profession. I have seen these children grow up strong and healthy and in no way to be distinguished as having been subject to tuberculosis. I believe in children the focus is eradicable in practically all cases of tuberculous cervical adenitis, and in trained hands the operation is a safe one.

The operation should be preceded or followed in most cases by an operation for diseased tonsils. Secondary operations for tuberculous cervical adenitis have been, in my experience, rare. When they have occurred it has sometimes been due to oversight on my part in leaving glands at a distance. We have to remove the primary focus. Last spring I operated on a child who had for three years a tuberculous adenitis. The people were intelligent and they had never been advised to have the glands operated on or the tonsils removed. I saw the case on the day set for operation. I operated and removed a tuberculous gland. Before the child left the hospital other glands were acutely enlarged. I advised removal of the tonsils, which was done at once. The child was sent to the country, returning to my office a few days ago. No vestige of secondary enlargement was present and the child was the picture of health. The tuberculin treatment is long, tedious and expensive, whereas operation will eradicate the disease in two or three weeks and the child will remain well. In adults, especially old bilateral cases with sinuses, we must give a bad prognosis and I believe tuberculin has a great field therein. I think the same thing holds true in abdominal tuberculosis. I allude to primary.

Dr. Myer Solis-Cohen (Philadelphia): Drs. McKnight and Trager are to be congratulated on calling attention to the great value of tuberculin, which physicians as a rule fail to realize. At the same time one should emphasize the great danger in giving tuberculin. They start with one ten-thousandth of a milligram, because, they say, people vary greatly in their hypersensitiveness to tuberculin. This hypersensitiveness does indeed vary greatly. One patient will react to one hundred-millionth of the amount of tuberculin necessary to produce a reaction in another. One patient may react to an intracutaneous dose of one-ten-millionth of a milligram and another may not react to less than a tenth of a milligram. Now if you give an initial dose of one-ten-thousandth of a milligram to the former, you are giving a dose a thousand times too large, and in pulmonary cases you may cause serious trouble. In surgical cases possibly you may not cause such serious trouble. If, on the other hand, you give this same initial dose to the second patient who reacts only to one-tenth of a milligram, you are giving a dose a thousand times too small.

There is a way of determining just what the dose of tuberculin should be for the individual patient by testing him intracutaneously. In order to determine the appropriate dose I first make the following test for tuberculin hypersensitiveness: I inject intracutaneously in a patient's forearm at the same time one ten-millionth of a milligram distally, one-millionth of a milligram medially, and one-hundred-thousandth of a milligram proximally, the injections being made in a diagonal line. By this technic the same lymph channels are avoided and there is less chance of having the lymphatics carry tuberculin from the larger injections to the smaller. Twenty-four and 48 hours after the injections are made their sites are examined for the presence of a papule or of induration, either of which is regarded as evidence of reaction. If no reaction occurs, one-ten-thousandth, one-thousandth and one-hundredth of a milligram are later injected, the smallest dose being distal and the largest dose proximal. If still no reaction occurs, one-tenth of a milligram and one milligram are then injected and, if necessary, at a still later time 10 milligrams. The smallest dose that produces a distinct reaction is the one to be given therapeutically.

Dr. McKnight said it did not make much difference what tuberculin was given, and that is the common view. Most physicians give O. T. As a matter of fact there are two distinct types of tuberculin. One, which is represented by O. T., is the culture medium in which the bacillus tubercle has been grown, which probably contains chiefly the exotoxin, or the toxin the organisms make outside of their bodies. Then there is the tuberculin, represented by T. R., consisting of bacillary bodies, which probably contains chiefly the endotoxin, or the toxin the organisms make inside their bodies. My method is to test O. T. in one arm and T. R. in the other arm. One patient may react to one-ten-millionth of a milligram of T. R. and not react to ten milligrams of O. T. If you give such a patient O. T. it will be of no benefit. He already has sufficient resistance to the exotoxin, but he lacks resistance to the endotoxin. In that case T. R., containing chiefly endotoxin obtained from the bacillary bodies, should be given. The point is that in tuberculin we have an extremely dangerous method of therapy, because people vary so in hypersensitiveness; but it is possible to measure a person's hypersensitiveness to either O. T. or T. R. and to give a dose based on his individual hypersensitiveness.

Dr. B. A. Thomas (Philadelphia): Dr. McKnight has particularly called our attention to tuberculin in surgical tuberculous affections. Seven years ago I used tuberculin in every type of case mentioned by Dr. McKnight. I have been criticized for not referring for lymphadenectomy more cases of cervical lymphadenitis of tuberculous type, instead of placing them on tuberculin therapy. I am not sure that Dr. Jopson is correct as to tuberculosis in childhood. I think we should be very conservative indeed in adults, so far as cervical lymphadenitis is concerned, and the same thing applies to bone and joint tuberculosis and possibly also to tuberculosis of the peritoneum. I would call attention to the field offered in urogenital affections. We are in a dilemma as to what is the best method of treatment of tuberculous epididymitis or orchitis. I am treating many such patients now by tuberculin therapy. The treatment by tuberculin or operation naturally is dependent upon many factors, and much discrimination must be exercised in determining the proper line of treatment in individual cases. The chief objection to epididymectomy or orchidectomy is that the other side so frequently becomes involved in the tuberculous process. So, I know there is a great deal to be said for tuberculin therapy properly administered, both in general surgical and urogenital tuberculosis, but it must be ever remembered that it may be an agent more potent for evil than good unless wisely supervised.

Dr. McKnight (in closing): Dr. Jopson has just told me that most of his child patients were private patients and come from good homes and excellent surroundings. These patients have good food, fresh air and constant medical attention. Our cases were dispensary cases, underfed and from poor home surroundings. Most of the children had operative scars on their necks, showing they had been operated upon but had had recurrences.

There are few physicians in the United States at the present time who know how to administer tuberculin. The experience some had in 1892, after coming back from Koch's clinic, has prejudiced them against the remedy for all time. The secret of success is maintaining the tolerance by increasing the increase in your dosage and by so doing having no reactions.

As far as the different preparations of tuberculin are concerned we have tried them all and find O. T. to be the best for our purposes. The emulsion may be given if the filtrate does not cure or produce immunity. The danger in its administration is the formation of abscesses at the point of injection.

CONSERVATIVE OBSTETRICS*

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It is not unnatural at this time, following the World War, that greater thought is given by the medical profession to the conservation of human life; and not a small portion of this study and thought has to do with the safeguarding of the interests of the woman in childbirth. At no time in the history of medicine has greater interest been given to prenatal care and conscientious obstetrics. Unfortunately, however, this attention applies to a small portion of the community. Nine-tenths of all expectant mothers receive no prenatal care, and over 40 per cent of the women in the United States are attended by midwives and physicians who are unqualified and incompetent to supervise the pregnant woman. These are some of the factors which explain the high fetal and maternal mortality, a mortality from infection which remains practically as high as it was in 1900. The general mortality in childbirth is second only to that from tuberculosis in women of the reproductive age, and between 40 and 50 per cent of these deaths are due to sepsis. Dr. Wm. Blair Bell, of Liverpool, commenting on the mortality in childbirth, recently stated that in his opinion, it was chiefly due to too great haste in the management of labor, and that next to this, faulty antisepsis was responsible. The position I desire to defend in this paper deals largely with this statement. It is based upon the fact that in a large number of cases, labor will terminate unaided and in a satisfactory way if nature is given the normal time to conduct the various maneuvers in its mechanism.

Obstetrics is a stern and exacting master, consuming our time, energy and best mental effort in the solution of her problems. He who would best serve this master, must first qualify by constant study of the science and art of obstetrics; then only can he hold himself in readiness to assist intelligently where nature is found wanting. The time element in labor is most important and we should keep in mind that the word obstetrics is derived from the Latin obsto, obstare, to stand by or against. We should stand by, watching the normal advance of labor, conscious of the fact that we cannot improve upon what is scientific; but should nature fail and the case become a pathological problem, we must be ready to assist, even to the execution of the gravest surgical problem. In a large group of uncomplicated cases, the teacher should counsel the general practitioner who does the bulk of this work as to the importance of this time element. We should endorse a simple surgical technique for its management, which means careful diagnosis, rigid asepsis, few or no vaginal examinations or rectal examinations, and finally, a constant study of the mother and infant's general condition.

It is not surprising that in this day of great haste some have suggested and defended methods of cutting short the length of both gestation and labor. In an attempt to standardize obstetrics, we hear of "labor by appointment" or "labor induced at term," which means that at a fixed date, labor is artificially brought on by use of bags, castor oil and quinine, pituitary extract or manual dilatation of the cervix. Others are less drastic, permitting the patient to go normally into labor at term, but shorten its course by surgical interference so that we hear of prophylactic forceps and the routine delivery by version and extraction. *Accouchment forcé* for definite indications, such as maternal and fetal distress as in hemorrhage or eclampsia, is not the subject of our discussion. The ability of the surgeon to cut short labor by some medicinal or surgical method, does not make it a scientific procedure unless there is a definite indication, but demonstrates the tolerance of nature to an offense in the normal case, and is often an illustration of meddlesome midwifery. We cannot improve on nature's method of delivery in the normal case by attempting to cut short any of the stages of labor. Are we to recognize this time element or are we to write into obstetrics a new chapter on forced labor? Are we to follow those who believe they can improve upon nature's laws, or shall we submit to nature's laws and base our therapeusis on physiological data soundly established? The conservative course in obstetrics, when the indications are absolute, sometimes does mean the gravest and boldest surgery, but in the vast majority of cases of dystocia several methods of assistance must be taken into consideration and usually an intelligent test of labor is requisite to reach the right conclusion.

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REPORT ON 10,642 CONSECUTIVE CASES DELIVERED IN THE PHILADELPHIA LYING-IN CHARITY

I have reviewed 10,642 consecutive deliveries at the Lying-in Charity, to determine the frequency of spontaneous labor and also the maternal and fetal mortality. We have followed a conservative course, I believe, in the management of labor, appreciating the importance of the time element. Maternity hospital results necessarily depend upon the type of work done. The Lying-in Charity is centrally located and does chiefly an emergency work. One-half of the patients are colored and at least seventy-five per cent of the patients are admitted in labor. The free patients are discharged on the fourteenth day if in a satisfactory condition; if not, the time is extended to meet the requirements of the case. Of the 10,642 cases with which this report deals, 6,406 were primipara, giving a percentage of primiparous cases of 60.2 per cent. These patients were delivered in all of 10,754 children, including 112 cases of twins, 1.05 per cent. In 1,075 cases some obstetric operation was performed to accomplish delivery, leaving 9,567 cases which were delivered spontaneously.

OBSTETRICAL OPERATIONS TO ACCOMPLISH DELIVERY

Operations	*Number*	*Per Cent 10,642 Cases*
Forceps	703	6.60
Version	116	1.08
Induction of premature labor	108	1.01
Cesarean section	90	.84
Craniotomy	45	.42
Breech extraction	6	.05
Episiotomy	3	.028
Symphysiotomy	2	.009
Hysterectomy	2	.009
	1,075	

Forceps operation was performed in 703 cases, 6.6 per cent, version was done in 116 cases, 1.08 per cent, induction of labor in 108 cases, 1.01 per cent, cesarean section in 90 cases, 0.84 per cent. The perineum was repaired in 1,933 cases, 18.1 per cent. Trachelorrhaphy was done in 21 cases and the adherent placenta removed in 10 cases.

MATERNAL MORTALITY

Causes	*Number*	*Per Cent*
Eclampsia	22	21.2
Septicemia	18	17.3
Placenta prævia	12	11.5
Toxemia	10	9.6
Pneumonia	10	9.6
Heart disease	9	8.7
Cardiac thrombosis	4	3.8
Intestinal obstruction	4	3.8
Pulmonary embolism	3	2.9
Concealed hemorrhage	2	1.9
Surgical shock	2	1.9
Postpartum hemorrhage	1	.96
Inversion of the uterus	1	.96
Aneurysm	1	.96
Empyema	1	.96
Typhoid fever	1	.96
	104	

The maternal mortality was 104 cases, 0.97 per cent. In studying these deaths, we find that 32 cases (30.8 per cent of the whole number of deaths) were due to eclampsia and toxemia; and that eclampsia, toxemia, placenta prævia, pneumonia and heart disease (63 cases in all, or 60.5 per cent) explains nearly two-thirds of the deaths. There were 18 deaths from septicemia, 17.3 per cent of the number of deaths, 1.69 per thousand cases. Two of these 18 cases were reported septic on admission, 4 were emergency cases, 12 had a general systemic infection, 2 septic pneumonia, 1 peritonitis, 1 pelvic abscess, and 2 metritis.

FETAL MORTALITY

Causes	*Number*	*Per Cent*
Prematurity	180	42.1
Inanition	71	16.5
Asphyxia	44	10.3
Congenital syphilis	37	8.6
Hemorrhage of the newborn	14	3.3
Pneumonia	13	3.0
Atelectasis	12	2.8
Patulous foramen ovale	9	2.1
Convulsions	9	2.1
Cerebral hemorrhage	6	1.4
Malformation	6	1.4
Toxemia	5	1.2
Hydrocephalus	4	.9
Enteritis	4	.9
Miscellaneous	14	3.3
	428	

There were 580 stillborn infants, which included 113 which were premature. Four hundred and twenty-eight, including 180 premature infants, died before leaving the hospital. Prematurity was recorded in 29.1 per cent, nearly one-third of the general mortality. The fetal mortality was:

Stillborn, including 113 which were premature		580	5.39%
Living births	10,174		
Died before leaving hospital, of which 180 were premature		428	3.98%
		1,008	9.37%

This mortality compares favorably with some of the other reports of large groups of cases.

Holt and Babbatt[1] in 1915 studied the records of 10,000 deliveries in the Sloan Hospital for Women, New York, and give the following table:

Abortions (less than 37.5 c.m. in length)		253	
Stillbirths (over 37.5 c.m. in length)		429	6.82%
Living births	9,318		
Deaths within the first 14 days		291	3.12%
		973	9.94%

Moran[2] in 1915 also reports 10,533 deliveries in the service of the Columbia Hospital, with the following results:

Stillbirths, including abortions		716	6.75%
Living births	9,817		
Died first 18 days in hospital		623	6.03%
		1,339	12.78%

Williams[3] also in 1915 studied extensively 705 fetal deaths occurring in 10,000 consecutive admissions to the Obstetrical Department of Johns Hopkins Hospital. In 334 of these deaths the child was premature; in 371, mature. He found in this report that the most common etiological factor in the production of death was syphilis, 26 per cent; also that the fetal death rate was twice as high in the black as in the white, 9.4 per cent to 5.15 per cent.

In this report, prematurity, syphilis, inanition, atelectasis and toxemia constitute nearly 50 per cent of the total mortality, conditions which are independent of labor. This brief summary emphasizes the fact that there is a great sacrifice of infants because of the neglect of prenatal care. This report also shows that nine-tenths of all labor cases will end spontaneously and successfully without surgical interference if the normal time element of labor is observed. Some of the above factors in the etiology of fetal and maternal mortality we cannot cope with because of racial or economic conditions. The public should be taught, however, that many of the risks attending parturition can be for the most part avoided by intelligent oversight of the parturient, by preparedness for rendering aid when needed, no less than by masterly inactivity when normal.

THE IMPORTANCE OF AN INTELLIGENT TEST OF LABOR

It is hardly necessary to elaborate upon the value of the importance of an intelligent test of labor. We all appreciate how, as labor progresses, the picture changes like magic; how the head, which before labor was high, is now at the end of the first stage well in the pelvic cavity; and in the second stage of labor how the occipito posterior case, by moulding and better adaptation of the head to the pelvic cavity, it is now rotated anteriorly and will be born spontaneously. Not only is the value of the test of labor seen in pelves of normal dimension, but in a contracted pelvis. In the latter, with an expectant course of treatment, 80 per cent will end with little difficulty. I was impressed some years ago with this conservative course, recommended in a paper on the treatment of contracted pelvis, by Dr. Monroe Kerr of Glasgow (1911). He compared a five years' service at the Glasgow Maternity (1901-6), when cases of moderate contraction of the pelvis (9.3 c.m. to 7.5 c.m.) were treated frequently by means of forceps, with a later service (1909-11), when they were left longer to nature, hoping for spontaneous delivery. The results were as follows: In 83 cases (1901-6) treated during the period when the forceps were used frequently, there were 7 spontaneous deliveries with no fetal morbidity or mortality. Seventy-six cases were delivered with forceps, showing a morbidity of 15 and a mortality of 25. In 46 cases treated later (1909-11), the expectant course was followed. Twenty-four were spontaneous, with one fetal death; while in 22 cases, forceps were used, with a morbidity of 1 and a mortality of 2. He next studied 130 cases of moderately contracted pelvis treated in ten years (1896-1906). In these cases, the forceps were used early, and there was a fetal mortality of 27 per cent. He compares this mortality with that in a series of cases treated later (1909-11). Here, in 22 cases, the more conservative course was followed, with one fetal death (4.5 per cent). How striking is the difference in the results in these tables, 4.5 per cent with the expectant course, 27 per cent when the forceps were used early.

The rules governing this course are as follows:

"1. The disproportion between the head and the pelvis must have been such that spontaneous delivery might have been reasonably expected.

"2. The second stage of labor must have been allowed to go on until there were indications in mother and child for haste in the delivery.

"3. When forceps are applied, the head must be fixed, and the operator must expect to be able to deliver with only moderate traction."

When the head is fixed at the inlet, I feel that by judicious traction we can (in selected cases) bring the head past the point of obstruction; failing in this, it is still not too late to resort to cesarean section. No group of cases taxes more the skill and judgment of the obstetrician.

SPONTANEOUS LABOR VERSUS ARTIFICIAL LABOR

If spontaneous labor occurs in 90 per cent of all cases, is it necessary or wise frequently to induce labor or after the onset of normal labor, to force the several stages? I think not. Irrespective of statistics in its favor and the individual skill of the operator, can any experienced obstetrician believe that the results for both mother and child will be better? My experience with induction of labor, which often means an enforced first stage, has not always been satisfactory. When considered for contracted pelvis, we are first confronted with the perplexing problem of attempting to estimate accurately the length of gestation. Doubting our ability to do this in any given case or even to approximate the time, owing to the faulty menstrual history, we must decide for or against operating from a study of the size of the uterus and particularly of the fetal head. The duration of pregnancy has interested medical men of all ages. The difficulty in calculating this is caused by the impossibility of determining with exactitude, in many instances, the date of conception; and even when the date of a single coition is known, it is clear that the conception may have occurred at any time between this date and the first missed menstruation. It is customary, therefore, to reckon from the first day of the last menstrual period; but this allows for an error in the reckoning of at least three weeks, for ovulation may be independent of menstruation, and fecundation may take place at any time during the interval between two menstrual periods. The normal length of pregnancy is usually estimated at two hundred and eighty days. Reid[4] studied 43 cases of pregnancy following a single coitus, and found that in 25 the duration was from two hundred and seventy to two hundred and eighty days. Winckel[5] has collected 20 cases, which he has carefully considered, and has accepted 6 as authentically proved prolonged pregnancies of 310, 311, 312, 324, and 336 days, with children weighing from 5,770 to 7,470 grams. On account of these difficulties in estimating the duration of gestation, the selection of an appropriate time to induce labor must, in many cases, depend very largely on speculation. Nevertheless, to fix upon the right time is important; for if the operation is performed earlier than the thirty-sixth week, the child may not live. On the other hand, if it is performed after this period, the head may be too large or too greatly ossified. Not infrequently, I hear a colleague make the statement, "This patient is at term; the other patient is premature or postmature." I have supreme admiration for those who possess this unusual ability. *It is my belief*, however, that it is exceedingly rare to find a woman going over the normal length of gestation. In the cases in which pregnancy seems to be prolonged to three hundred days, or thereabouts, this is probably a mistake, brought about by our faulty methods of calculation.

McDonald[6] has suggested a method of estimating the duration of pregnancy by measuring the height of the uterus. His rule is as follows: "The duration of pregnancy in lunar months is equal to the height of the uterus in centimeters divided by 3.5. It depends upon the more or less regular growth of the uterus of 3.5 centimeters each month of four weeks, and is very exact after the sixth month. The measurement is taken with the patient lying flat. One end of the tape is placed at the upper border of the symphysis, while the other is held by the thumb into the palm of the hand. The fingers of the open hand are held at right angles to the fundus of the uterus, and the tape follows the contour of the uterus, save at the last dip. Multipara with lax abdominal walls and thin uteri should be supported at the side, so as to bring the occipito-coccygeal axis of the fetus into the long axis of the mother's body." Thirty-five centimeters, he claims, is the usual height of the uterus at full term with a fetus of 3,300 grams. I have tried out this method; but, as the abdominal wall varies so much in thickness, the procedure has not been of great service to me.

Failing in our ability to estimate the length of gestation, we now attempt to measure the size of the growing head. The cephalometer of Parret and Boudin is of value but, I believe, the measurements are not always accurate. It is better (judging from my experience) to resort to the Muller-Kerr method of fitting the head to the pelvis. There are two objections to this procedure, however. One is the necessity of complete anesthesia; and the other, that, in not a few cases the breech presents.

My experience with the induction of premature labor has not been so satisfactory as that of those who advocate the operation. It begins in obscurity, and often ends in disaster and it is not nearly so simple as pictured by some. The introduction of a rubber bougie or bougies into the uterus does not always bring on labor promptly, and the bougies may rupture the membranes; or if a rubber bag is used, the onset of labor is uncertain. In one case it may follow immediately, and in another it may take days to induce it. Then, too, there is danger of infection, displacement of the presenting part and prolapse of the cord. In a case recently treated, I had this last distressing complication. The patient was a primipara at forty, with a moderately contracted pelvic outlet. I introduced, under anesthesia, a small Voorhees bag with a base measurement of 2½ inches. This is inserted in the afternoon. The patient did not go into labor until the following morning. That evening, twenty-five hours after its introduction, the bag came away on exerting a little traction. Following this, the membranes ruptured; and with the rapid escape of water, the cord became prolapsed. This complication was, in my opinion, superinduced by the displacement of the presenting part. I immediately reposited the cord, and then thought it best to end the delivery with forceps; but I lost the infant. I believe that in the majority of cases of contracted pelvis, the patient had better go to term.

Reed,[7] of Chicago, has recommended the induction of labor at term. He reports 100 cases, with a maternal mortality of 2 per cent and a fetal mortality of 7 per cent. He inserts a bag, and reduces the length of labor to a general average of 7¾ hours. He believes that shortening the labor process and the preservation of the maternal vitality makes for immunity and prevents infection that may follow prolonged labor. He admits that there is danger of prematurity, but thinks that it matters little whether the child comes two weeks before term or not. It does make a difference, however, he says, whether the child is delivered two weeks after the expected time. To follow out this course of frequently inducing labor near term is, in my opinion, inviting trouble. Our patients sometimes become nervous and anxious to have pregnancy terminated. This applies particularly to hospital cases. Premature labor is sometimes instituted in such a case for the convenience of the physician or patient, but it is not obstetrics. I agree with a recent writer that normal labor with a large infant is apt to be safer than an induced one with a smaller child. In a recent article by Ehrenfest[8] on "Intracranial Lesions," he calls our attention also to the fact that among the conditions which predispose to these injuries is prematurity, due to an abnormal fragility of the dura and the vessel walls. We should be extremely careful about inducing labor at term and should only resort to it when we have perfectly justifiable fetal or maternal indications. Unless this course is followed, like cesarean section, the induction of labor will be too frequently performed.

A word in regard to the use and abuse of pituitary extract. It is an uncertain remedy. This uncertainty of action is probably due, as in the case of ergot, to our inability to standardize the drug. It has been valueless for the purpose of starting labor. During parturition, however, its action apparently increases in strength with the length of time the labor has lasted and is most marked near the end. Like ergot, this drug will sometimes throw the uterus into a state of clonic spasm. It should not be employed in normal labor or where there exists faulty presentation or pelvic disproportion, but is most efficient in the multipara who has had the test of labor and the head is on the pelvic floor. It is not, however, against the judicious but against the unnecessary and indiscriminate employment of this drug I wish to protest.

As before intimated, the physician in attendance upon a labor case is often in too great haste and does not exercise sufficient judgment. He fails to keep before him the important fact that labor follows a definite course and is of definite duration: in the primipara, about 24 hours; in the multipara, about 12 hours. According to Veit, 20 hours is the duration of the primipara and 12 in the multipara. By failing to take this fact into consideration, the physician is led to the untimely use of this drug or else, failing to appreciate its danger, uses it deliberately to shorten labor. Disregard for the time element in labor is seen chiefly in the management of the second stage. Here pituitary extract, forceps and versions are used much too often, and without definite indications. The desire to hurry through this stage of labor seems to be an obsession with some operators.

Recently De Lee,[9] of Chicago, has recommended the "prophylactic forceps operation," which he describes as the routine delivery of the child in head presentations when the head has come to rest on the pelvic floor. He also advised early removal of the placenta. Primiparous labors and those in which the condition of the soft parts approximates a first labor, are treated by this method. To accomplish this artificial delivery, he does in advance an extensive lateral episiotomy. This rapid termination of the second stage is possible in the hands of the expert, but should it become a general practice, I believe it is bound to be harmful.

The routine use of version and immediate extraction has been strongly advocated by Potter[10] of Buffalo. He does an internal bipolar podalic version and extracts the child for the purpose of eliminating the second stage. He reports 1,113 deliveries, in which he did 920 versions, and in this report he also did 80 cesarean sections. He turns when the cervix is dilated or dilatable, so that in many cases he also forces the first stage. Is this large proportion of versions necessary if 90 per cent of all labor cases will end spontaneously? Version for a definite indication such as hemorrhage or faulty position, yes; but to make the breech present when nature has made the head present in 95 per cent of cases is to me unwise, and to turn and extract for the purpose of eliminating the second stage of labor is unnecessary. If version is such an obstetrical panacea, why was this not the case in the seventeenth century, before the discovery of forceps? But the obstetrician then was not satisfied with his results and welcomed the time when the Chamberlains divulged their family secret of the forceps to the College of Amsterdam.

The chief lesson I have learned in serving the Philadelphia Lying-in Charity in the past thirty years is that many of the complications and tragedies that we witness to-day in obstetrics are brought about by too great haste, a tendency to ride roughshod over the precepts laid down by the old masters in our art, an attempt to solve the problem in the quickest way. While this tendency is in accord with the spirit of the times, I feel that we often invite trouble by attempting to cut short the normal length of pregnancy or labor.

CONCLUSIONS

The high fetal and maternal mortality to-day is in part due to conditions in obstetrics which we cannot immediately remedy: inherited taint (which explains the frequency of prematurity), racial and economic conditions. Much is being done, however, along the line of prenatal care and follow-up work. The Sheppard-Towner Maternity Bill, which has recently passed the United States Senate, although defective because it gives control of health measures to nonmedical boards, may be of service. If the midwife must stay, let the other states regulate her duties as we have done in Pennsylvania, to our credit. She is compelled here to do a conservative work. Normal labor is not interrupted. She keeps her hands off the patient, and must call a physician when any complication develops.

We can do much by practicing a conservatism which keeps in the foreground the fact that nature's laws should be observed. Under normal conditions, spontaneous labor, aided by proper analgesia, is the safest way for the mother and child. It should be looked for in 90 per cent of cases. Inordinately applied operative interferences increase the hazards of birth. The intervention of the forceps or elective version and extraction as a routine measure, for no other indication than shortening or eliminating the second stage of labor to relieve pain, is not justifiable. Obstetrics is time-consuming and always will be. It is like all great tasks and the physician who is not willing to give it the required time had better take up some easier specialty.

The management of normal labor should be made a simple surgical procedure and the patient given an intelligent test of labor. This means careful study of its onset, subjectively and objectively, the constant study of the fetal heart and the condition of the mother, rigid asepsis, few vaginal or rectal examinations. By following this course, complications will be recognized and what is more important, unnecessary operations will be eliminated.

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DISCUSSION

Dr. Collin Foulkrod (Philadelphia): I do not think the State Medical Society should pass this by without saying that conservatism does not mean standing still. A lot of progress has been made. Women are going to have babies with the least possible pain. The Sheppard-Towner bill is the handwriting on the wall which indicates that the women in their voting and progressiveness are going to find the best way. Conservatism doesn't mean letting a woman deliver herself, because she will probably tear the muscles as much as in a forceps delivery. Hospitals in every county of the state for women in childbirth are going to minimize the length of labor and give her less danger and pain.

Dr. Lida Stewart Cogill (Philadelphia): With reference to the midwife mentioned in Dr. Boyd's paper, he stated that the greatest percentage of deaths was from eclampsia and toxemia. If we encourage the midwife there would be lack of prenatal and postnatal care and so an increased maternal death rate. More deaths occur in child-bearing women from the fifteenth to the forty-fifth year, due to causes incident to childbearing, than from any other condition except tuberculosis. We will never bring down this mortality with the midwife. I think to train midwives is a step backward. I think the state should provide means for organizing health centers in the foreign quarters of the city and educate foreign women to the importance of having trained physicians to care for them, in place of encouraging the formation of classes for midwives. I understand the foreign women object to having prenatal care because they have to go to men for attention. There are ways of correcting this. A recent magazine article ("The Model Hospital") stated that at last women had found their place in medicine, that of midwives, as one of the institutions in this city would train midwives. I regretted that. Perhaps women have found their place in medicine, but not as midwives and not without proper college training, and I object seriously to having classes formed for midwives. I make a plea for the formation of classes to educate women to the importance of having proper scientific care for their labor.

Dr. C. E. Thomson (Scranton): It seems to me Dr. Foulkrod has left this subject up in the air, which is a popular place to-day. I should like him to be more specific as to how he is going to obviate the pains of labor by acts of the legislature.

Dr. Fred Fisher, Jr. (Erie): I have frequently seen midwives who have had some training, who, when they call you to an obstetric case, will tell you just how much dilatation they have. Often they will be perfectly filthy, and many times with their dirty hands will hand instruments to you. I have seen a woman take out a pair of scissors to cut the cord that looked like a relic of the fifteenth century, drop them on the floor, then grab them up and hand them to you. It is not to be wondered at, because lots of these women have absolutely no education. They are frequently foreign women who have never seen the inside of a school, who know nothing of sanitation in their own homes, and in a short course of lectures it is impossible to impress on them the necessity for sanitation. I have attended in the families of these women and their home conditions are deplorable.

It is hard, in a short course, to teach cleanly habits to persons whose home conditions are bad. Even if they call a physician in good time infection is very apt to occur. Then the physician will be blamed and not the dirty midwife who made examinations without washing the hands or without the use of antiseptics. The midwife may be told not to do this, but she will do as best suits herself.

Dr. Boyd (in closing): In my paper I desired to emphasize a physiological fact, namely, that labor pursues a definite course, and that it involves a fixed amount of time. We have not given up the art of obstetrics. We have always considered the patient's comfort, and by the judicious use of morphin and anesthesia plus psychic measures, we can carry her through the normal test of labor. We should look for spontaneous labor in 90% of cases. By following an expectant course of treatment version will not often be indicated. It seems to me that if labor is progressing normally with the head advancing, it is quite unnecessary to push it back and do a version.

Dr. Cogill referred to my remarks upon the midwife. As the state recognizes her work it is necessary that she be well trained, and I attribute her satisfactory results in this state to the fact that she is compelled to do a conservative work.

FREQUENCY OF INDIGESTION OF FATS DURING FIRST TWO YEARS OF LIFE; CAUSES AND TREATMENT[*]

JOHN D. STEVENSON, M.D.

BEAVER

In discussing the frequency of fat indigestion in early life it is well to bear in mind that such causes as poor hygiene and surroundings, external influences, as heat and cold, diseases in other parts of the body, overfeeding, irregularity of feeding, inherited weakness and many other conditions of both mother and child, may have a disturbing influence on the function of lactation, with a resultant indigestion of all the food elements.

Though the above mentioned causes may frequently be the chief factor in many cases of indigestion in the breast-fed infant, yet disturbances of digestion in general and especially of fats is so much more frequent in the artificially-fed infants that I will limit my discussion to this type of cases.

True, a certain percentage of cases of fat indigestion in infancy are caused by carbohydrates, proteins and various proprietary foods, yet the largest number and by far the most difficult cases are those fed high fat, made up from the top milk mixtures.

By dipping 16 oz. from a quart bottle in which the cream has arisen we get approximately 7% fat, 4% sugar, and 3.2% protein, simple dilution of which looks very easy and appeals not only to medical students and nurses but also to mothers. This, I think possibly, is very good treatment in selected cases where intelligently used; but to the average nurse, unless she has had a thorough course in infant feeding, such mixtures are apt to be very misleading. Not infrequently do we find her using, not one-third, one-half or two-thirds top milk as the case may be, but almost pure gravity cream for her mixtures. She not only improperly uses the top mixtures herself but imparts this wrong information to the mother, who in turn tells her neighbor how to use top milk mixtures in feeding her baby, which results in the prevalent belief that many babies cannot take cows' milk.

Not infrequently do I see babies who have been doing poorly and find, on calculating the percentage of fat in the formula, that it ranges from 4% to 8%.

Keeping the above mentioned facts in mind it would be better not to teach the use of *top milk* formulæ but rather formulæ made up of gravity cream and skimmed milk or simple whole milk mixtures.

In discussing the causes of any type of indigestion in infancy mention should be made of the use and abuse of the various proprietary foods. Many of these foods, which are widely advertised by the manufacturers, contain a high percentage of carbohydrate, and because of their general use in inexperienced hands, are frequently the primary cause of indigestion of all the food elements. However, I think if we teach against the use of top milk mixtures the percentage of cases of fat indigestion can be considerably reduced.

From a symptomatic standpoint the three main symptoms that accompany fat indigestion are vomiting, abnormal stools and stationary weight or loss of weight. In those cases characterized by marked vomiting, the stools may show nothing abnormal, the vomitus having carried off the excess fat. The vomiting usually occurs in the middle or towards the end of the feeding interval and has the odor of butyric acid.

We see three types of fat stools: 1. The "soap stool" which, on inspection, appears fairly well digested. They are large, hard, dry, and usually of a grey or greyish yellow color. 2. The second type is full of many soft, fine white curds, very much resembling curdled milk. 3. Then we have the loose, green, strongly acid stool which is apt to irritate the buttocks.

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[*] Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

Diagnosis: The diagnosis depends mainly on two clinical features, viz: The reaction of the patient to the quantity of fat given in the food, and the type of stools.

If the disturbance of metabolism has become so marked as to bring on an advanced state of malnutrition such as "infantile atrophy" we would have to eliminate congenital syphilis, tuberculosis and other chronic diseases.

From the vomiting type we must exclude such conditions as pyloric stenosis, or spasm, vomiting from high carbohydrate or protein and from overfeeding. In most cases they can readily be differentiated by the type of vomitus and by the other symptoms accompanying each disease.

The "soap stool" cases are usually mild and may not be accompanied by vomiting. They show a stationary weight. Microchemical examination of stools helps clear up the diagnosis.

The soft, fatty curds, the curdled milk type, is usually more severe and more readily recognized. Here also microchemical examinations of stools is helpful.

The loose, green, irritating stool type must be distinguished from the carbohydrate type, or indigestion with fermentation, as excessive amount of fats might be eliminated with diarrhea caused by carbohydrates or indigestion and fermentation. Lowering or changing carbohydrates relieves the latter while eliminating or lowering fats relieves the former.

Treatment: In the artificially-fed child reduce the quantity of fat in the food to meet the baby's tolerance. By a careful analysis of the history of the case one can often arrive at a percentage that will be within the child's tolerance. In the far advanced type it is advisable to start him off on a fat-free formula and gradually increase the strength every three or four days by the addition of one-half per cent fat in each new formula. By so doing most cases will be cured. Every step in this process should always be controlled by careful examination of the stools. While the child is on low fats the caloric value of the food can be made up by extra carbohydrates or proteins or both. In very resistant cases or those having reached a state of infantile atrophy or marasmus, breast milk should be given if it can be obtained.

377 Third Street

DISCUSSION

Dr. Theodore LeBoutillier (Philadelphia): In opening the discussion of Dr. Stevenson's paper, there are, to my mind, a few points that should be emphasized a little bit more forcibly, although, as a whole, the paper certainly brings out good points which everyone should know and should be able to find in the indigestion caused by fats, in babies under two years of age. In the first place, we are rather inclined to overdo the feeding of fats. While fat is without doubt a necessary element of diet to these babies, we are inclined to push it too hard. Particularly is that true in hot weather. We find more trouble during the summer months in the crowded sections of the city than we do at any other time or any other part of the community. In these cases I agree with Dr. Stevenson that top milk mixtures are wrong. If we start with a fat-free milk or start with diluted milk and add fat as necessary, or as we find that the child can digest it, then we are going to have much better results than otherwise.

There are comparatively few cases of fat indigestion, serious fat indigestion, which to my mind, are not secondary to some other cause, the heat in the summer months being first and foremost. At other times of the year any disease of the lungs, tonsilitis or other contagious diseases will very rapidly cause an intolerance for fat, and for that reason we should certainly reduce the fats in all babies who are ill. It is a thing that is not very often done. We keep on feeding an ill baby the same things we fed a well baby. It is often difficult, particularly in the loose, green, watery stools, to make an offhand diagnosis that it is caused by too much fat, and yet by a chemical examination and microscopic examination that point is readily cleared up.

Dr. Harry Lowenburg (Philadelphia): Of all the interesting and valuable papers that have been presented before this Section, I regard this contribution as the most important so far. I believe that the doctrine of low fat and of the skim milk dilutions should be more universally applied. I believe that the majority of children who suffer from digestive disturbances and malnutrition suffer from being fed too much fat. I have long ago discarded top milk. I regard skim milk for practical purposes as fat free, knowing this to be theoretically incorrect, and I regard whole milk as 4% cream, and with these two I am able to secure any combination that I wish. I believe that the majority of cases of malnutrition that are brought to us, at least this has been my experience, can be made to gain in weight almost immediately if they are put upon diluted skim milk. Sometimes the effect is almost dramatic.

I have been accustomed, in years gone by in teaching, to use the example of the heater fire. You come down in the morning and you do not put on heavy coal, which may be regarded as cream, but rake the heater (hunger period or purgative) and you then give it draft and put on pea coal, which may be regarded as skim milk. When the fire burns brightly you know tolerance is established, and then you put on your heavy coal—cream. And so with the infant, we must start on a milk that it can digest and then later add whole milk. You cannot make him gain in weight merely by feeding him fat. He must first be able to digest it and then to assimilate it.

Referring to the food element at fault, however, it is impossible to make a diagnosis as clear-cut as the Doctor's remarks would lead us to suppose. The mere presence of excess fat in the stools does not necessarily say that fat is the etiologic factor. If you have an alimentary disturbance with diarrhea caused by any of the food elements, all of them are hurried through the intestional canal and all will appear in the stool, not as the result of indigestion necessarily, but of non-digestion, and the important thing is to study the chemical reaction of the stool, more than its microscopic or macroscopic appearance. This, together with the correct history and scrutiny of the formula, will usually permit of a correct conclusion as to which food element or elements are at fault.

I want to repeat that I think Dr. Stevenson has presented a most important topic.

Dr. Stevenson (in closing): I agree absolutely with Dr. Lowenburg. Those cases are not always so clear-cut as my paper might lead one to believe; I meant the paper to bring out a discussion. Some cases are very hard to diagnose even by the aid of a microscope, but I think the microscope helps us a great deal.

Another thing that I might have put too much emphasis on is the history of the case. I think it is not always wise to rely too much on history. I said that we could often arrive at a conclusion by the history of the case. I have in mind a baby of eight months brought to my office some few weeks since. The baby was fairly well nourished, but was somewhat pale and anemic; otherwise a physical examination was negative. The mother said the baby had been bottle-fed since birth. She had used Horlick's Malted Milk the first two months, then switched to Sweetened Condensed Milk for the next four months. She said every three or four weeks the baby would have attacks of diarrhea. At such times she would withdraw all food being given and put baby on barley water for a week or ten days until diarrhea would clear up. She continued that way until she came to my office. Drawing my conclusions from history alone (the mother not having brought the stool along), I put baby on a modified cow's milk formula of fat 2%, prot. 2%, carb. 6%, carbohydrate being in the form of dextro-maltose. Baby did well for a day or two, at which time another attack of diarrhea developed which was more severe than any previous attack it had had. The mother returned to the office with baby, bringing with her one of the stools. Examination of stool showed many fine, soft white curds, mucus and diarrhea. She reported no vomiting. Diagnosis: fat indigestion. On the withdrawal of all fat from the formula, otherwise making no change, baby's stools showed normal digestion in forty-eight hours' time. Baby continued to do well and make a normal gain in weight by the addition of one-half per cent fat to formula thereafter every four or five days, until after a few weeks his fat tolerance was established, thus proving the fat type of indigestion when history suggests a carbohydrate type.

DIAGNOSIS AND TREATMENT OF NOCTURNAL AND DIURNAL ENURESIS*

FRANCIS B. JACOBS, M.D.

WEST CHESTER

Although the subject in hand is an old and more or less hackneyed one in medicine, the modern literature and textbooks on the subject of enuresis give us practically no new ideas. This very difficult condition to control in any reasonable length of time has been so remarkably and quickly cut short in the first few cases treated by the methods which I want to bring to your attention, that I have been stimulated to go deeper into the subject.

The intelligent diagnosis of abnormal physical conditions must first be made. They then should be classified under their respective headings, and when this is done, we will find that there are still a large number, and perhaps the largest number, where no physical defects can be found. My paper, therefore, should include, first, the classification of the cases of enuresis under the divisions according to physical defects with their treatment; and, secondly, those cases in which there is no apparent cause, and which are called pure physicosis by some physicians.

The cases are selected from hospital, private and institutional boys and girls. I have endeavored to secure fifty cases which have been treated with pituitrin, and to compare this method of treatment with that of the older and standard methods. Unfortunately, I have been able to get the records of only forty-nine cases up to date.

I think most of us will agree that the removal of tonsils and circumcision are of little value. There are, of course, such conditions as cystitis, vulvovaginitis, phosphaturia and highly acid urines, also vesical calculi, which undoubtedly cause enuresis and are curable by appropriate treatment.

Some physicians believe that where no apparent cause is found there is a hypersensitive area at the base of the bladder; and get very satisfactory results from local treatments or by irrigations.

In the rarer conditions, such as atony of the bladder, faradism or suprapubic galvanism have been used. The treatment internally by drugs, such as belladonna or atropine, ergot, sodium bromide or strychnia, extends itself over a long period of time. My personal results with strychnia have been happier than the other drugs.

The careful training of the child, getting him up during the night for micturition, followed by plunging the feet into cold water, is so annoying and the subconscious mental impression so great that not infrequently we get a very decided improvement.

In a pamphlet issued by the Russell Sage Foundation, September, 1917, edited by W. H. Slingerland, Ph.D., of the Department of Child Helping, we find a very large collection of institution cases reported, with their methods of training the child. The impression left in one's mind after reading this article is twofold: first, the enormous number of children that are subject to enuresis, and second, how tedious and unsatisfactory have been the results of treatment.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

In the *British Medical Journal* of June 12, 1920 Stanley E. Denyer reports the treatment of enuresis by superpubic galvanism with excellent results.

Heiman Caro reports in the *Journal of the A. M. A.*, Vol. 72, page 477, twenty-five adult cases of enuresis observed during the war in one of the army hospitals. Although no treatment was given, his conclusion as to the cause was that it was due to psychophysical defects, wherein the factors of monotony and exhaustion exaggerated the potential present.

In my series of forty-nine cases, forty were institutional and nine from other sources. Of these forty, eleven were girls and twenty-nine boys. Of the other nine, eight were boys and one a girl of eighteen. In an institution of four hundred and fifty girls, we were only able to find eight seriously enough affected to be of interest to study, while in the institution of six hundred and fifty boys, it would have been easy, if practical, to have gotten probably a hundred cases; thus showing the apparent greater frequency of enuresis among boys than girls.

In the treatment, the ordinary commercial extract of the pituitary gland used in obstetrical practice, and of course, obtained from the posterior lobe, was used. One c.c. was given hypodermically, with a few exceptions, in the treatment of the girls, when one-half c.c. was used, sometimes alternating with the one-tenth grain tablets by the mouth. The latter, however, were without effect. The institutional boys got three to five injections at an interval of one week, the girls three injections at the same interval. The other nine cases received their injections every other day for eight to ten doses. The results were as follows: Cases treated, 49; greatly improved, 17; cured, 16; no effect, 16. Therefore, we find that thirty-three of the forty-nine cases were cured or greatly helped by the treatment. A period of three months has elasped in most of the cases reported as cures. In the cases reported as greatly improved, the enuresis has been cut from a nightly occurrence mostly to once a week, and in many cases, to once or twice in twelve weeks.

In a number of cases marked improvement was noticed after the first treatment, while in others three injections were given before a so-called cure was established. Two boys of six, one of whom was cured, received ten treatments every other day. The second of these, on receiving his third injection of 1 c.c., became quite faint, but on reducing the dose to one-half c.c. had no further unhappy effect.

Masturbation has been brought out as a cause for enuresis. In one of the boys, a confirmed masturbater, the enuresis was cured, but the boy continued to masturbate just the same. In the great majority of the boys there was phimosis, but cures were obtained without its having any apparent bearing. Some few had enlarged tonsils.

When we consider the reasons for the beneficial effects which we have apparently obtained, there seems to be some logic in the treatment. The questions I ask myself are: were the results because 1, The majority of my cases were mentally below normal, and that the treatment supplied an endocrin extract which was deficient? 2, Did the pituitrin stimulate the more normal function of the muscle fibers of the bladder or sphincters? 3, Were the kidney cells affected or inhibited?

In Vol. III, page 805, *Oxford Medicine,* Magnus and Schäfer showed that the posterior lobe extract caused a diuresis due to the dilatation of the kidney vessels, and Motzfield concluded that injection of the posterior lobe extract, although giving an initial polyuria, had eventually an antidiuretic effect. In my cases, I did not have the opportunity to study the quantity of urine excreted.

In Tice's Practice of Medicine, Vol. VIII, 1921, is a very comprehensive article by Engelback and Tierney on the "Disorders of the Pituitary Gland." This article shows that polyuria is one of the diagnostic features of Hypopituitarism of the posterior lobe. This fact may have a direct bearing on the beneficial results I have obtained.

I will leave it to future observers to classify the exact type of enuresis cases, male or female, of pre- or postadolescence, in which positive results can be obtained in every case. All I can hope to accomplish in this paper is to record my experience with a few cases, trusting that the discussion may bring out some further experience on this subject.

DISCUSSION

Dr. Henry Pleasants, Jr. (West Chester): It has seemed to me that Dr. Jacobs has presented his subject extremely fairly. He has brought before us one of the problems with which all of us who practice medicine are at times confronted, and he has not made exaggerated claims but has given us merely the results of his research.

It is up to us, therefore, those of us who are interested in the subject, to continue our study of this problem along the lines which Dr. Jacobs has outlined. It has occurred to me that the best way to study the subject is to try to explain the reasons why Dr. Jacobs has obtained his results. Let us look at the physiological side:

When the sympathetic nerves meet either the cranial or the sacral in any viscus the effects are antagonistic. For example: The cranial contracts the pupil; the sympathetic dilates it. The cranial slows the heart; the sympathetic accelerates it. The sacral contracts the lower part of the large intestine; the sympathetic relaxes it. The *sacral relaxes the exit from the bladder;* the *sympathetic contracts* it.

In sleep the sympathetic is supposed to be at rest; hence the relative predominance of vagus (cranial) nerve impulses: the narrow pupils, slow pulse, respiration, etc. Therefore, in sleep we would expect to find a predominance of sacral nerve impulses in relation to the bladder. As we have already said, the sacral impulses tend to relax the exit from the bladder.

Now applying what we have learned regarding the nerve impulses of the bladder, let us study the endocrine relationship to the nerve functions. The posterior pituitary gland is considered primarily a female gland, but we do not yet know definitely its function in the male. It is reasonable to suppose, however, that it is not inactive, and that its nervous influences are distributed to analagous organs in the male which are located near the base of the bladder. It is also reasonable to assume that a hypo-activity of the posterior lobe of the pituitary would result in a more or less atonic condition of the nervous system in the region of the base of the bladder, and a lessening of the normal sphincteric control, especially in sleep. When this atonic nervous condition is met with the opposite effect in the nervous impulses of the sacral nerves which tend to relax the exit from the bladder, enuresis results. The administration of pituitrin brings about a normal balance temporarily, and its influence is extended over a sufficient time to break up a habit; just as the administration of one or two doses of bromide is sufficient to break up a habit of sleeplessness in many cases.

PULMONARY ABSCESS DUE TO LODGMENT OF A TOOTH*

ELLEN J. PATTERSON, M.D.

PITTSBURGH

Foreign bodies of dental origin are a more frequent etiologic factor in pulmonary abscess than is apparent upon a cursory review of the literature. In fact, since we have begun to realize that lung abscess is a common disease to-day and to study its etiology, the percentage of cases due to the aspiration of teeth is too great to pass unnoted. The first thing to ask in a case of lung abscess is whether or not there has been an extraction of teeth. In justice to the dentist, questioning in this direction should be discreet.

In the majority of cases of lung abscess due to the aspiration of teeth the loss of the tooth was unsuspected by the exodontist. In most cases the tooth was aspirated into the respiratory tract during extraction under gas or ether anesthesia, but a few have occurred under local anesthesia. Sensation is abolished at the site of operation under local anesthesia, and the pharyngeal and laryngeal reflexes are not so active as normal. The position of the patient is such that a tooth falling from the forceps may easily be aspirated by the patient without any sensation in its passage through glottis and into a bronchus. Under gas or ether anesthesia, of course, the reflexes of the patient are abolished and a tooth may readily be aspirated into the lower respiratory tract without exciting any reflex cough or subjective symptoms at the time of the accident.

Unless the dentist, in checking up the teeth during extraction, discovers that all teeth are not accounted for, the patient may become a victim of lung abscess. Should a tooth or filling be missing after operation, it is the duty of the operator to insist upon an examination by an expert roentgenologist at the earliest possible moment and not to take it for granted that the tooth has been swallowed or is lying upon the floor of the operating room. There is nothing reprehensible in the accidental losing of the tooth, as it has happened with the most skilful operators, but the neglect of a thorough search for the missing tooth in the respiratory tract of the patient renders the dentist legally liable for negligence.

The tooth having been aspirated into the respiratory tract may be coughed out, but this is too rare to justify waiting in hope of such an occurrence. The usual history is similar to that of the case reported below.

Teeth that are condemned as unfit to remain in the mouth are usually sources of infection, apart from the usual flora of the mouth, consequently they carry infection into the respiratory tract, and readily become the cause of pulmonary abscess unless removed within a few days after aspiration by peroral bronchoscopy.

The usual history of these cases is illustrated by the following case report:

F. D., male, aged 54 years, was referred by Dr. C. R. Clark, of Youngstown, Ohio, May 28, 1920, with the following history: the patient had had a cough for years to which he attached no significance until an attack of epidemic influenza in February, 1920, after which the cough became much worse, accompanied by profuse expectoration of foul pus, daily elevation of temperature as high as 102°, loss of 22 pounds in weight and some pain in right chest after coughing. He complained of feeling very weak and his attitude toward life was one of great indifference. The man looked very ill, with the peculiar greyish complexion found in profoundly septic cases.

Although there was no history of a foreign body, Dr. Clark's suspicions were aroused as soon as the case came under his care and he had a roentgenogram taken by Dr. J. Heberding, of Youngstown, Ohio, which showed a foreign body in the right lung. Upon seeing the roentgenogram, I asked the patient if he had had any dental work done. He replied that he had lost a gold crown ten years previously and that he had had teeth extracted a year previously under anesthesia, but that the dentist showed him all the teeth extracted.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

Upon admission to the hospital, another roentgenogram (Fig. I) was taken by Dr. G. W. Grier, who reported as follows:

"The x-ray examination of Mr. F. D. shows a metallic foreign body in the lower part of the right lung. This is an irregular-shaped foreign body, about three-eighths of an inch long and one-fourth of an inch wide. From my conversation with the man, I am inclined to believe it is a gold crown off one of his molar teeth. My opinion is that it is in one of the posterior branches of the lower lobe bronchus. It is considerably farther down than the bifurcation of the trachea, and lies posteriorly, being about 1½ inches in front of the spine. There is a large area of affected lung around the foreign body, which is evidently filled up with pus. This area is irregular in shape and involves a great deal of the lung beyond the foreign body."

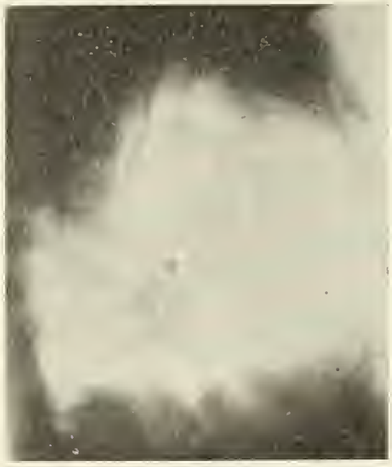

Fig. I. Radiograph showing tooth located in posterior branch of right lower lobe bronchus.

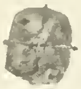

Fig. II. Tooth removed from right lower lobe bronchus by bronchoscopy.

Physical examination by Dr. Jos. H. Barach revealed increased whispered voice in the right axilla. Vocal resonance increased. Auscultation revealed a low-pitched vibratory sound at third and fourth ribs anteriorly and to right of sternum. The lower half of the chest revealed suppressed breathing, anterior and posterior. Leucocyte count 10,400; urine negative.

Diagnosis: Obstruction, partial, of right bronchus. but no general anesthesia, I removed a tooth from the posterior branch of the right lower lobe bronchus in 55 minutes. The tooth was buried in granulation tissue below a stricture, through which came a profuse discharge of foul pus. The highest temperature following bronchoscopy was 99.4°. It remained normal after the seventh day. Dr. Barach reported that the physical signs indicated that the right lung was clearing rapidly and the patient was discharged on the tenth day. He gained four pounds the first week after leaving the hospital, and after spending the summer in the Adirondacks returned to his business in good health in the fall.

The foreign body removed was not a gold crown but a filled molar tooth such as had been extracted (Fig.
At bronchoscopy, using local anesthesia in the larynx
II), though the dentist had not noted any tooth missing among those extracted.

COMMENT

The promptness with which Dr. Clark had the matter of foreign body determined in a case of pulmonary abscess is especially worthy of note. Only too often foreign body seems to be overlooked as a cause of pulmonary abscess, and especially so in cases like this one with a clear history of acute pulmonary disease (influenza) to account for the abscess.

CONCLUSIONS

1. Teeth aspirated during extraction are a not uncommon cause of pulmonary abscess.
2. Any tooth or portion of a tooth or filling having been unaccounted for after extraction obligates the exodonist to insist upon an immediate ray study by an expert roentgenologist to eliminate all possibility of the foreign body having been aspirated into the respiratory tract.
3. When a tooth has been aspirated, immediate bronchoscopy for its removal is indicated.
4. If removed by a careful bronchoscopist within a few weeks, no serious pathology results from the aspiration of a tooth. If allowed to remain, abscess with its high mortality, will surely follow.
5. Bronchoscopy is almost invariably successful as to removal, and in long-standing cases bronchoscopic removal results in cure of the abscess.
6. Careful bronchoscopy is attended by probably less than one per cent of mortality.

Westinghouse Building.

DISCUSSION

Dr. Chevalier Jackson (Philadelphia): There are so many interesting points brought out by Dr. Patterson that I shall speak only of those which I think deserve special emphasis.

First, as to the frequency: There is no question whatever but that the cemeteries contain a certain percentage of people who have been buried with teeth in their lungs, the teeth having caused their death without a diagnosis ever having been made. They die of pulmonary abscess or some complication of pulmonary abscess, such as myocarditis, endocarditis or cerebral embolus. In the early days these were not discovered, owing to the fact that they had no x-ray aids as we have to-day for the discovery of foreign bodies. To-day they are still undiscovered because of the tendency of practitioners to regard foreign bodies in the lung as curiosities of medicine, not as possibilities to be excluded in every acute or chronic chest case. If there is trouble in the lungs there is a possibility that it may be caused by a foreign body.

It would take all morning to recite all the cases illustrating that one point. I shall speak of only one case which came under the observation of Dr. McCrae at the Pennsylvania Hospital. A diagnosis of pulmonary abscess had been made, but Dr. McCrae, in going over the history, saw that the patient had had a tooth extracted under general anesthesia, and requested a roentgen-ray examination to be made for foreign body. This was made by Dr. David R. Bower, who found a portion of a tooth in the abscessed lung.

Another point that Dr. Patterson made I think demands emphasis, namely, the earlier discovery of these cases. I think that just as every abdominal surgeon, as a routine system, checks up every sponge to see that none is left in the abdomen, so every dentist after each extraction should go carefully over every fragment of filling or of tooth removed, as well as over his instruments, to make sure that all of the tooth structure is accounted for and that no portion of an instrument has disappeared. In either case an immediate roentgen-ray study is imperative.

No man who has not tried it has any conception of the difficulties encountered in removing a tooth from a pulmonary abscess, as was so skilfully done in this case by Dr. Patterson. It is absolutely impossible for any man who has spent all his surgical life working with both hands and both eyes in an open wound to realize what it means to work through a long tube with one eye only, and to go down into a pulmonary abscess for a tooth.

Dr. Michael V. Ball (Warren): I just want to report a case I saw in Rochester, Minnesota, at the Mayo Clinic, and which Dr. Bissell, who does the autopsy work, showed. This was a woman who gave a history of having swallowed a tooth. Nobody would believe it. An x-ray was taken, but possibly the technique was not as highly developed; at any rate it failed to show a foreign body. The woman was operated for cancer of the breast, developed pneumonia, and died. At the postmortem, Dr. Bissell found a tooth away down in the most distant part of the right lung. That impressed me with the fact that even the x-ray may fail to show just what is present. She had a little bronchiecstasis and there was a history of cough. The left lung showed fibroid changes.

The point I want to make is that in making an autopsy we should not neglect going down to the very finest bronchioles. Then, of course, the x-ray plate must be carefully studied.

Dr. J. Homer McCready (Pittsburgh): Dr. Jackson says many of these cases go on to the grave without knowing there was a foreign body present. That reminds me of a case I had six months ago, a girl admitted to the Tuberculosis League in Pittsburgh and who was diagnosed by two doctors as chronic tuberculosis. The routine examination made there includes a radiograph in all cases. During this routine examination they found a metallic foreign body in the right bronchus. I passed a bronchoscope and removed a small Indian head from the abscessed cavity. The mother gives a history that eighteen years before this girl had inspired this Indian head but they had never given it much thought. So you see if all these cases of chronic lung trouble were radiographed many cases could be saved. After six months this girl still has her abscessed cavity. No doubt, foreign bodies in the lung, if they remain any length of time, will produce lung abscess.

Dr. Patterson (in closing): I only want to say that almost all these cases of foreign body of long standing, come in with a diagnosis of tuberculosis and repeated attacks of pneumonia. This is the usual history. This case that I reported came with a diagnosis of pulmonary tuberculosis, although the sputum was negative. These cases almost invariably come in with a history of repeated attacks of pneumonia, and very often are diagnosed as tuberculosis with negative sputum.

SELECTIONS

DISEASES OF THE ACCESSORY NASAL SINUSES*

WALTER D. CHASE, M.D.

BETHLEHEM

No class of men, professional or manual laborers, is more completely occupied than is the average general practitioner of medicine. It is, therefore, impossible for the average doctor to keep completely up-to-date in diagnostic and therapeutic measures, much as every practitioner may desire to do so. I believe that a certain number of our profession have not had sufficient opportunity to acquire the necessary skill in using the nasal speculum to diagnose the very important diseases of the nasal chambers which occur in everyone's practice. Indeed, those of us who have had the good fortune to receive much special coaching frankly admit our fallibility in dealing with these conditions. But I consider these diseases so exceedingly common and of such importance that I believe we should all become able to recognize their characteristic symptoms, to diagnose them, and then to see that proper measures for their cure are promptly instituted. In other words, we are just as responsible for the diagnosis and treatment of our cases of sinusitus as we are for the recognition of and proper advice in appendicitis and mastoiditis.

When your patient complains of headache during an acute cold, influenza or many of the exanthemata, or in many chronic complaints, do not neglect to examine the interior of the nose; as *constipation, dyspepsia, refraction errors*, etc., do not cover all causes of headache. Likewise, earache, the stopped-up nose, unusual nasal discharge, unnatural sense of smell, nasal character to the voice, hearing defects, etc., call for thorough nose examination. Use a good light, reflected into the nose by a head mirror. Headlights seldom furnish a light which reaches all the recesses of the nose that can be seen by the reflected light of the head mirror. Note whether the septum, or partition, is straight or obstructs one side of the nose. Observe whether there are greatly enlarged turbinates, or polyps, and, above all, observe whether there is pus and whether it emerges from under the anterior end of the middle turbinate, from above this turbinate, or back on the posterior wall of the rhinopharynx. Pus may have its source from the general nasal mucous membrane, as in atrophic rhinitis, but *much* pus usually comes from one of the bony cavities which are a part of the nose, though partly shut off from it by the thin bony partitions which we shall describe later. Observe, also, whether there is pus in only one side of the nose. Many times, the pus may be seen on the post-pharyngeal wall, where it lodges in its descent from the sinuses in the back portion of the nose.

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*Read at the regular monthly meeting of the Northampton County Medical Society, December 15, 1921.

The acute sinus disease usually recovers rather promptly if properly treated. When not satisfactorily improving, consult the specially trained man, as many of the cases become dangerously complicated, the complicating condition being just as impressive as a mastoid disease supervening in acute otitis media. If your case of nose infection has severe frontal pain, or head pain in other areas, together with more or less purulent discharge (seen, remember, sometimes only on careful examination through the nasal speculum), fever, etc., immediately confine him to bed, give calomel and saline purge, keep room temperature not too low, administer analgesia to suit your habits, give atropine or belladonna enough to reduce the excessive nasal secretion, and spray the nose lightly with ½% of cocaine-hydrochloride every three hours, further to reduce the greatly swollen nasal mucosa.

This is done to reëstablish the openings of these bony annexes to the nose, so that they may be aërated and drained of their inflammatory products, as the inflammation of their mucosa is a direct continuation of that of the mucous membrane of the general nasal chamber. The addition of adrenalin to the shrinking spray may be followed by a reactionary turgescence of the sensitive mucosa which may make his "last state worse than his first." Sometimes, irrigating the nose with warm normal saline, a few minutes after the use of shrinking spray, assists. Inhaling steam from a bowl of hot water also very frequently brings distinct comfort.

If, however, your case grows worse instead of better, orbital, cerebral or other complications may occur, and special procedures are indicated, these being the duties of the trained rhinologist. Special operative measures in the cases requiring it bring just as prompt and satisfactory results here as does surgery in any other infected field, and its application is more readily practiced, because much of it is done under local (cocain) anesthesia, with the patient sitting in a chair. The major operative work on the frontal and maxillary, of course, is necessarily done under ether.

The nasal sinuses are formed by evagination of the mucous membrane into the overlying hard part, and, by bone resorption, the bony cavities result. The blood and nerve supply enter at the openings of the sinuses. This can readily be understood if we remember that the mucosa of the sinus, with its contained vessels and nerves, is simply an expanded extension of what was primitively the covering of a plain bony surface. This is important to remember, as it helps explain the mechanics of over-congested or polypoid-changed mucous lining, as any narrowing at the ostium of a sinus dams back the venous outflow, intensifying the engorgement.

The frontal sinus is not present at birth. It appears during the second year and becomes a typically developed cavity by the seventh to the ninth year. The ethmoids are present at birth but attain their characteristic form along with the developmental period of the frontal sinus. The maxillary sinus is present at birth as a very small cavity, the mucosa occupying so much space that the actual sinus cavity is very small. By the sixteenth to the eighteenth year, it attains its mature size, having developed with the second dentitional changes in the alveolar portion of the superior maxillary bone. At birth, the sphenoid is represented simply by a slight furrow on the anterior surface of the sphenoid bone. By the sixteenth year, the sphenoid sinus has matured.

The outlet ostium of the frontal is at its most dependent portion, in the erect posture, while the ostium of the maxillary is in the upper portion of its internal wall. That of the sphenoid is toward the upper border of its anterior wall. The ostia of the ethmoids are more or less at their inferior portions, the bulla cell being the lowest one of all the cells of the ethmoid capsule. The frontal sinus develops as an outgrowth, anteriorly, from the ethmoid capsule, upward between the tables of the frontal bone. The sinus on one side may differ greatly from that on the opposite side, extending far beyond the median line and occupying a good share of the space normally taken up by its fellow. Rarely they are absent or so small as to be found with difficulty. The ethmoids number 9 to 14 on each side, and they vary considerably in size, shape and location. They are grouped into a honeycomb-like mass, called the ethmoid capsule, with the outer wall forming the inner orbital plate; in front is the frontal sinus; above is the floor of the anterior cranial fossa; behind is the sphenoid bone; internally is the nasal side of the capsule, partly covered, "box-like," by the middle turbinate.

Disease of the sinuses, then, would be indicated if the acute rhinitis becomes aggravated, if the pus discharge continues longer than usual, if there is unusual headache or head pain in some special or typical location; if pain is intensified by stooping or blowing the nose, if there is vertigo or inability to concentrate the mind, if complicating infection occurs in the orbit, or if brain symptoms are threatened, etc. Chronic sinusitis indications are: Long-continued nasal discharge; foul-smelling nose discharge; occlusion of one or both sides of the nose by polypoid change; pharynx, larynx, ear or eye complications; anosmia (or absence of sense of smell); cacosmia (or erroneous sense of foul smelling), etc., etc.

Given a case of suspected sinus disease, we must determine whether one or more of these bony cavities is the seat of the diseased process. This we do by means of the history and by the evidence obtained by examination through the anterior nares, by x-ray, transillumination, etc. The amount of pus may be indicated by inquiring how many handkerchiefs the patient requires per day; what time of day does most of the pus escape? Is there pain, when and where? Does pus come from one or both sides of the nose? Is pus hawked down into the throat from the back of the nose? What is its color and consistency, as, is it greenish, and is it in formed crusts or scabs? Does patient say that members of his family can detect a foul odor from his nasal discharge? Next, examine nose by reflected light from your head mirror, noting whether pus exists in a large mass on the floor of nose, whether it is seen in a string, extending up under the front end of the middle turbinate, whether it also appears above the middle turbinate, or whether it has accumulated in a mass, clinging to the back wall of the nose. If issuing from under the front end of the middle turbinate, it can come from the antrum, the frontal or from the ethmoid cells of the anterior group. If coming from above the middle turbinate, it comes from the sphenoid or from the posterior group of ethmoid cells. To determine whether there is pus in the antrum, we wash out the nose with normal salt solution, cocainize under the middle portion of inferior turbinate and insert the antrum needle. Blow air into the cavity. If a bubbling sound is heard, pus is probably present, and washing this out with the saline solution will furnish positive proof. Now, pus may have found its way into the antrum down through the hiatus semilunaris from the anterior ethmoid cells or from the frontal, the maxillary antrum in this case acting as a reservoir. To rule out the frontal, wash out this cavity through the frontal sinus cannula, first cocainizing and locating the frontal canal with the graduated probe. If no pus is washed down, we have only the anterior ethmoid cells left to exclude. These are solved by washing out the antrum and having patient wait an hour, then again washing out antrum. If pus is found at this second washing it must come from the overlying anterior ethmoids, as it does not so quickly reform in the antrum.

Transillumination of the antrum and frontal is an aid also. To study the antra place the small electric light in the mouth and have the patient close lips on it. If one antrum does not transmit the red color, that side is probably diseased. Having patient look up, eyes wide open, the pupil of the affected side will also fail to show red from the illuminating rays through the roof of the mouth and floor of orbit. To examine the frontals with this agent, place the lamp against the inner, under surface of the orbital ridge, having all but the end of the lamp hooded, and the unaffected sinus will transmit the red color from the lamp. The most accurate method is to employ two lamps; in this way both sinuses are seen simultaneously and any difference in the transmission of the light rays is the more readily detected. The use of the transilluminator should be in a well-darkened room. It can, however be employed by using a heavy cloth such as photographers use to shield the camera while focusing for a picture. This agent cannot be used in determining disease of the ethmoid or sphenoid sinuses. Here the x-ray comes into play.

To diagnose posterior ethmoid and sphenoid disease, we have to press the middle turbinate laterally, after shrinking it with adrenalin and cocain, and probe for the sphenoid ostium. If we can introduce the probe, follow with the sphenoid cannula and wash out this cavity. If pus is found, we are fairly safe in deciding its source is the lining mucosa of the sphenoid. If none is present, then we can figure that the pus which we have seen above the middle turbinate comes from the posterior series of ethmoid cells. Sometimes, we have to remove the rear half of the middle turbinate so as to get at the diseased sinuses above that structure. Doing this will be an aid to the patient, as it will facilitate drainage of the pent-up pus, allow freer breathing through that side of the nose, relieve pressure, discomfort, etc., and we need have no hesitancy in sacrificing this tissue.

The symptomatic evidence of disease of the various sinuses is very helpful. Acute frontal infection causes pain directly over this cavity. Pressing with the fingers up under the supraorbital ridge at its inner extremity—better still, having the patient press down upon your two fingers, which are placed under the inner ends of the supraorbital ridges, as this is the thinnest portion of the sinus wall, will show which sinus is tender. A slight edema overlaying the bony sinus floor can frequently be sensed with the palpating finger, even though there be no visible swelling of the soft parts. The subjective symptoms are pain, fever, usually an obstructed corresponding side of the nose, and, sooner or later, purulent discharge. There is at first a feeling of pressure and heaviness. Later the typical pain is felt in the early morning hours and is due to the added congestion from the low position of the head and also from the poorer drainage during recumbency, as the ostium is then at a higher level than it is during the upright position. After the patient has been on his feet for a time—and frequently this interval is spent by the patient pacing the floor in extreme discomfort—there is an escape of considerable pus and simultaneous easing of the pain. This sequence of events tends to recur daily and is exceedingly characteristic. Anosmia is usually present, due to the occlusion of the superior nasal passage by the swelled mucosa, thus preventing the air reaching the olfactory terminations which are distributed over the top of the septal mucosa and the opposite mucosa at the superior turbinate rudiment.

Complications may arise, there being periostitis, and osteitis affecting the inferior wall, or, especially, caries or necrosis. In this condition, the overlying parts show edema and points of multiple abscesses, the pus having burrowed through the sinus wall in an effort to escape. Sequestra of bone may be found unless free drainage and the removal of diseased portions is done promptly. If the bone destruction extends backward, epidural abscess results. Also, thrombophlebitis of an intracranial vessel may occur, as may meningitis and brain abscess. These latter intracranial extensions result from the infection traveling along the venæ perforante.

In chronic frontal sinusitis, we have the case which did not automatically resolve during the acute stage or which was not cured by special measures carried out to a successful conclusion. The great cause of chronicity is failure to furnish sufficient drainage, because of septum deformity, diseased middle turbinate, polyps, etc. The mucosa of the nasofrontal canal shares the pathological change that has occurred in the sinus itself and there is no longer a sufficiently patulous drainage passage. In the chronic state, there is usually not so much pain, and occasionally there is none. The pus may be abundant at times and scant at others. In the latter cases it is due to the decrease in formation rate between exacerbations, and it is then apt to be less yellow and more mucoid. Its place of appearance may be atypical, being deflected backward into the posterior nares by a swollen middle turbinate and uncinate process, or polyp changes on these structures or even on the septum opposite. It may even appear above the middle turbinate, finding its way there by capillary attraction. Interference with smell usually exists.

In the diagnosing of the chronic case we have the x-ray, suction apparatus test, transillumination and the washing of pus directly from the sinus by means of the frontal sinus cannula. If no pus is found on the first inspection, we must look for such suggestive signs as redness or swelling of the structures around the outlet of the sinus, the uncinate, middle turbinate at its anterior end, and that portion of the septum opposite. If necessary we may have to push the turbinate away from the lateral nasal wall or snare off its anterior extremity to introduce the sound and follow this with the irrigating cannula. Blowing out pus or washing pus out of the sinus establishes the diagnoses. Scanty discharge may mean permanently changed mucosa, while abundant pus may come from less-damaged, but greater-producing inflamed mucosa. Pus of curdy appearance and a wash water slightly milky in appearance indicates deep-seated inflammation with considerable tissue change. Edema of the upper eyelid may mean orbital complications. Diplopia and interference with mobility of the eyeball indicate probable orbital abscess. Pushing of the eyeball forward and outward is due to subperiosteal abscess.

Brain complications may not be indicated by any change in the previous symptoms. However, there is usually a marked change. The patient's headache may cover the entire cranium, or at least change its location. The pulse is usually rapid, or it may be very slow. There may be hot flashes. Unusual restlessness and sleeplessness may occur. Nausea and vomiting, photophobia and vertigo may be present. The temperature may be hyper- or hypo-normal. Stupor and delirium indicate the presence of irritation and compression of the brain.

Treatment: In the acute form, put the patient in bed; give a thorough cathartic; atropin or belladonna t.i.d.; light diet; keep the room comfortably warm; spray the nose with ½% cocain solution; inhale steam; put ice bags to affected area. It is possible that very hot applications will be better borne. Give analgesics as needed. If, at the end of five to seven days things have not improved, snare off the anterior end of the middle turbinate, as this removes the swollen external barrier to free drainage. If no improvement follows, we must conclude that extensive change has occurred in the lining of the sinus, and a radical operation is necessary. This operation indicates removing all diseased areas through an opening of the external wall, together with the accompanying diseased ethmoid cells (as these cells invariably share in the diseased process), and proper drainage through the nose during the subsequent healing period. The present-day radical frontal operation consists of removing more or less of the anterior and inferior walls and establishing an opening up through the anterior nasal chambers for ample drainage until final healing has been secured. Probably the Lothrop and the Killian operations meet all the requisites for perfect cures. Rasping out the nasofrontal canal will afford fairly free drainage, but diseased mucosa or bony structure of the sinus walls cannot be curetted except through the radical, external operation.

Maxillary sinusitis, or antrum disease, is due in twenty per cent of cases to dental infection, as the roots of the upper teeth are very close to the floor of this sinus, especially the second premolar and the first molar. The other 80% of cases are due to infections which enter either directly from the outlying, general nasal mucosa, or, occasionally, through the blood or lymph circulation, as every acute coryza is accompanied by conjestion of the antrum mucosa. Infection also results secondarily from the overlying ethmoids and frontal sinuses, as is shown by an anatomic chart to be mechanically possible. Fracture of the antral walls, lues, tuberculosis and malignant growth account for rare cases. The symptoms are: pain in that region of the face, or a feeling of pressure and distention, occluded nose on that side, usually fever and chilliness, and, after a day or two, the discharge of serous or purulent material commences. The pains may have the characteristics of neuralgia, and this neuralgia may be referred to the supraorbital region. I saw a case recently which had been in the hands of a very prominent surgeon in a near-by city. He had injected the trifacial nerve to cure the neuralgia of a patient whose pain was due to an intense antrum infection. A feeling as if one of the upper teeth were too long sometimes exists. Stooping, jarring, sneezing, etc., intensify the antrum pain. Smell sense is interfered with. Severe cases cause some edema of the face, and orbital complication causes edema of the eyelids. Chronic antrum cases may have few symptoms and they are commonly overlooked. I have in mind a case who had been a regular attendant at the best rhinolaryngological dispensaries in New York City for years, whose antrum had never been needled and the sinus disease had continued, being the cause of her laryngeal affection for which she had been treated solely all that time.

Treatment of maxillary sinus infection is very easily carried out. Besides daily nasal douchings with normal saline solution (care being taken to have patient use it correctly), any obstructing polypus, deviated septum or abnormal middle turbinate should be corrected surgically. If no such obstruction exists, the sinus should be washed two or three times weekly through the medium-sized antrum needle. The ten per cent cocain-adrenalin solution is applied under the inferior turbinate at about its middle and the needle readily and painlessly penetrates the membranous or thin osteal frame work which forms the inner maxillary wall. Washing out with the antiseptic chlorine solutions, using increasing strength of alcohol or 2 to 12% solutions of silver nitrate sometimes cures cases which seem obstinate to simple saline cleansings. A sinus whose washings continue foul or curdy, with milky discolorations of the return-fluid, tends toward radical operative requirements. The operations usually meeting the needs of the case are two: The preturbinal where the anterior, angular wall-junction is trephined and rasped out and the available diseased mucosa curetted; or the removal of the outer wall by the canine fossa route. This consists in entering the sinus above the alveolar process by removing much of the facial wall, scraping away every vestige of thickened membrane and then establishing permanent drainage by removing the nasal wall beneath the inferior turbinate. Iodoform gauze packing is lightly placed in the cavity, the free end being brought into the anterior portion of the nose, and two silk sutures unite the incision above the alveolar process. Subsequent biweekly irrigations are easily carried out until healing has occurred.

Ethmoid sinusitus may be acute catarrhal, acute suppurative, chronic catarrhal, chronic suppurative or chronic hyperplastic with suppuration. The acute catarrhal accompanies all acute coryzas and its symptoms are those of coryza. Acute purulent inflammation is usually found with acute frontal inflammation and involves the anterior ethmoid cells. The symptoms are obstructed nares, loss of smell, headache of a tense character, soreness of the eyeballs on rotating the eyes and sometimes orbital neuralgia when concentrating the vision. The previously-mentioned treatment should be rigorously insisted upon (rest in bed, cathartics, shrinking spray, atropin, etc.). Sometimes surgical drainage is needed. This consists of opening the lowest cell, the bulla.

The chronic catarrhal or hyperplastic ethmoiditis is the result of repeated attacks of coryza and any continuing irritating influence over a term of months or years, and is characterized by the presence of polyps. These polypoid changes, sometimes producing a large, pendulous growth, at other times forming numerous smaller buds, are usually found on the anterior end of the middle turbinate, along the uncinate process, or on the bulla. In advanced cases the interior of the ethmoid cells may be more or less transformed into polypoid masses. The symptoms are like a continuing coryza, always being aggravated by any influence which would tend to cause a head cold, sneezing, absence of sense of smell, or watery discharge, stopped-up nose, irritation of the eyes and headache at the base of the nose and above and below the eyes, sometimes extending to the temples. Secondary symptoms are eustachian tube involvement with hearing defect, pharyngitis, bronchitis and asthma. Bronchitis has been found accompanying 30% of these hyperplastic (polypoid) ethmoiditis cases. Treatment must not be conservative if you expect a cure. Snaring off a few large polyps is not sufficient. Their root-attachments must be removed, and, if polypoid change exists in the interior of the ethmoid cells, more or less of the whole ethmoid capsule must be removed, ether by curetting or cutting away. It is a very common experience to have a patient state that he has had polyps removed, not once, but several times. Unless a thorough removal of the diseased ethmoid cell-mass is accomplished, your patient will *continue* to have new crops of polyps and a continuance of the reflex symptoms such as asthma, etc.

The chronic suppurating ethmoiditis case usually accompanies frontal or maxillary empyema. The discharge is pus and the pus tends to dry into crusts in the nares, on the pharyngeal wall and even in the larynx. Anosmia and cacosmia are usually present. Usually dry pus is seen at the external nares; the middle turbinate is swollen and pus will be seen under its front end, and the uncinate process looks enlarged. The inferior turbinate may be atrophied. The treatment includes the proper accompanying curative measures for the frontal or maxillary disease. In the frontal case, the ethmoid cells are removed at the time of the frontal operation. The ethmoid cells may be removed by the intranasal route; or, after making an incision inside the inner canthus of the eye and peeling back the periostium from the lachrymal bone and the front portion of the lamina, or outer ethmoid wall, an opening is then made through this external wall and the diseased cells removed under direct vision.

The chronic hyperplastic-suppurative type of ethmoiditis is the case that has the combination of polyps and the discharge of pus. Whether the purulent infection of the sinuses precedes the formation of the polyps, or whether the reversed process is the course of events, is not agreed upon by different authors. Besides the previously mentioned symptoms, such complications as rupture, with the formation of a fistula at the juncture of the lachrymal bone with the lamina papyracia, orbital abscess, inflammation of the lachrymal duct, and intracranial involvement sometimes occur. What might be called an artificial complication consists of emphysema of the upper eyelids if the nose is forcibly blown after these cells are opened; I once saw such emphysema in a labor case, the result of severe straining by a patient who had a dehiscence in the lamina papyracea. The operative treatment (and there is no other treatment worth while) is similar to that of the plain suppurative, chronic ethmoiditis.

The sphenoid sinus is probably congested or more or less inflamed with every acute coryza, because it is so intimately placed with the posterior ethmoid sinuses, because its ostium is high on its front wall, and because the space between the lateral nasal wall and the septum at this point (the sphenoethmoidal recess) is so narrow. Any swelling of these neighboring structures tends to block up the ethmoid, preventing drainage and aëration. In acute sphenoid infection, the headache is more severe than in the ordinary head cold, and is localized in the parietal and temporal regions. The ears feel stuffy. The eyeballs are often tender. There is considerable fever. Sleeplessness, dizziness and general malaise are experienced. Undue prolongation of the symptoms of an acute head cold, with greater severity of the symptoms, directs our suspicion to the sphenoid sinus. Here, of course, the purulent discharge would be seen descending over the posterior wall of the rhinopharynx. Washing out the sinus with the sphenoid cannula causes a degree of relief which strengthens the belief that the sphenoid, instead of the ethmoids, is the seat of the pus formation. We may be able to bring about resolution of the acute infection by shrinking the tissues in front of the sinus with cocain, thus allowing periodic emptying and the opportunity for the sinus mucosa to throw off the infection and regain its natural functioning powers.

Chronic sphenoiditis may exist with few symptoms, only the posterior nasal and pharyngeal signs and symptoms being present. The back wall of the pharynx looks varnished and dry, or there may be a cross-furrowed appearance. A raised, thickened, red fold behind the posterior pillars of the fauces may be seen instead of the varnished aspect or the cross-furrows. This is due to the constant overflow and evaporation of the discharge from above. The patient has difficulty in hawking out the adhering mucopurulent material, sometimes being obliged to scrape it away with the handkerchief wrapped around the finger. Where there is no interference with drainage, no pain may be complained of, but where such obstruction exists, severe headache and prostration occur. The headache is relieved when the discharge forces its way out of the sinus, though a dull discomfort may continue between the severe exacerbations. The location of these severe head pains varies, sometimes being on the vertex, radiating toward the temples and mastoid regions. A deep-seated pain behind the eyes may be felt also. Alcohol, tobacco, constipation, etc., intestify this pain. Vertigo is present on stooping, jarring or on sudden change in position of the head. Inability to concentrate and do mental work is the rule. Disagreeable subjective odors is frequently a prominent sypmtom. Hoarseness and "sore throat" are practically always complained of, being secondary to the extension of the mucous membrane inflammation and the descent of the pus from the sinus above. Bronchial affections are simply one step further in this complication. Ocular complications are frequently encountered.

The cure of chronic sphenoid disease is effected by removing that portion of its front wall between the ostium and the floor. This may necessitate the removal of the posterior half of the middle turbinate or even curetting away the posterior ethmoid cells, both being done to secure the drainage which must be established and maintained until the inflamed lining has healed. This artificial opening tends to granulate up and close surprisingly quickly, but cauterizing the granulations with zinc chloride solution or a chromic acid bead or recuretting as often as necessary will keep the drainage passage open, and ultimately one will be able to see a thin, nondischarging lining where formerly the cavity was covered with polypoid membrane and pus.

PITTSBURGH ACADEMY OF MEDICINE

TOBACCO AMBLYOPIA

DR. E. A. WEISSER

It is generally conceded that true tobacco amblyopia is a rare condition, in fact, many ophthalmic writers deny the existence of it at all. In other words, they claim it is associated with alcoholic amblyopia. Again, either tobacco or alcoholic amblyopia is supposed to occur usually between the ages of 40 and 50 years.

The case reported us is a man of 74 years of age, who for eight months complained of dimness of distance vision and his inability to read the newspaper. Several oculists and opticians were consulted to improve his vision but without success. Likewise, he has taken medicines of various kinds, but to no purpose. He never drank intoxicating liquors, but for the past fifty years or more he smoked from 5 to 10 Wheeling tobies daily.

Upon examination his vision was found to be 3/60 in either eye, unimproved by glasses. External appearance of the eyes was normal. Irides respond equally and freely to light, accommodation and convergence. The media were clear other than a few peripheral striæ of lenses. Both fundi were normal for his age, except for some pallor of the temporal halves of the discs. There was a little concentric contraction of his fields but there was a distinct scotoma for colors. Tobacco was interdicted and he was given strychnine grs. 1/20 T. I. D. In three months there was complete restoration of vision by proper glasses, the discs cleared and the scotoma disappeared entirely.

REPORT OF A CASE OF SCLEREMA OF THE NEWBORN

DR. THEODORE ELTERICH

Sclerema of the newborn is an exceedingly rare disease in this country. This disease should not be confounded with scleredema, a condition which is also of somewhat rare occurrence and is seen in patients suffering from chronic diarrheal diseases. Apart from the peculiar waxy induration of the skin covering the lower extremities and back, the characteristic features of this disease consist of a subnormal temperature (as low as 90 F.), pulmonary atelectasis and generally a very enfeebled condition of the patient. It usually occurs in prematurely born infants.

Baby S., female, age 5 weeks, was admitted to the Pediatric Department of the Allegheny General Hospital, June 15, 1921. The patient was the first child born to these parents, both of whom were healthy, with no history of syphilis or tuberculosis. The pregnancy was normal. Delivery took place at term but was difficult and instrumental with a severe injury to the scalp. The birth weight was seven pounds and the infant appeared normal. It was breast-fed.

About one month after birth, peculiar swellings appeared on the ankles which rapidly spread to the thighs, to the back and shortly before death to the left cheek and eyelids. The induration was hard and tense, the skin yellowish white with no pitting on pressure, and later became livid. It gave the impression as if parafin had been injected subcutaneously.

The temperature was usually about 99 F., but shortly before death rose to 104 F., which occurred five days after admission to the hospital.

Examination of heart and lungs was negative, likewise Wassermann and tuberculin tests.

TREATMENT OF GONORRHEA IN WOMEN

DR. NICHOLAS SCHILLITO

Because of the very mild symptoms in some cases smears are made from all cases in which there is the slightest suspicion. The staining method is important; simple staining with methylene blue is not sufficient. Gram's method should be employed, and the examination should be made by one familiar with the method.

The diagnosis being made, the next step is the adoption of a method of treatment, which will eradicate the gonococci in the shortest time. This certainly cannot be done by douches or anything that can be used by the patient herself. When you consider the numerous structures which may be infected, urethra, para-urethral glands, vulvovaginal glands, endocervix, endometrium, tubes, etc., it is apparent that the physician must seek every focus of infection and destroy it.

Rest, preferably in bed, is desirable, but many patients are unable to obtain it for various reasons. All violent exercise such as dancing, etc., is forbidden. The diet should be easily digested and nonstimulating; spices, condiments and alcoholics being interdicted. Patients are urged to drink plenty of water. If there is burning on micturition potassium bicarbonate with some balsamic is given. If, as is generally the case, the urethra is infected a crayon of argyrol, made by pulverizing the crystal and making it into a plastic mass with a small drop of one of the lubricating jellies such as K. Y. and moulding it to about the size of a stick of silver nitrate, is inserted into the urethra and retained by a small piece of cotton inserted between the labia. The reason for using this form of medication is that on account of the short urethra any medication by injection passes into the bladder and its contact with the urethra is not of sufficient duration to produce results, while with the solid stick of argyrol we get continuous medication with an efficient, nonirritating gonococcocide for several hours. The first application frequently relieves the pain and burning and makes the patient comfortable. Occasionally the patient will complain of slight pain lasting for a few minutes after the first treatment. This is due, perhaps, to the fact that occasionally there is not enough of the jelly used to make the crayon smooth and lubricate it properly.

This method is also admirable in the treatment of valvovaginitis in children. Any one who has tried to treat a child by irrigation will appreciate the difficulty frequently encountered. The crayon is inserted into the vagina and a napkin applied, the whole process taking about a minute.

In the great majority of urethral infections the paraurethral glands are involved; they may be destroyed by the electric cautery or by the injection of a 10% silver nitrate solution. Most of the writers on the subject recommend for the purpose a hypodermic needle with the point ground off.

Recently a dental supply syringe marketed under the name of Sausser's irrigator has been used with success. It is a syringe of the Leuer type with a platinum needle inserted into a glass hub. It will not corrode, remains permeable, and may be bent to any desired curve, which is necessary, as the ducts sometimes open within the meatus. When they are so situated it is necessary to use some form of retractor or speculum. Kelly recommends a small retractor made of a bent hairpin held in a hemostat. This is satisfactory in some cases but not in all. A more useful speculum is one known as the Skenoscope. It may be made by cutting off a Kelly cystoscope and closing the end by soldering the obturator in place, and cutting a fenestra at the junction of the funnel end and tube, inserting this into the urethra and turning it till the duct appears in the window it can easily be injected. The same syringe is used for injecting the vulvovaginal glands which are frequently infected; 10% silver nitrate is used. In case the urethritis does not clear up an endoscope should be inserted and small ulcers sought for, and if found, each spot touched with a 5% silver nitrate solution. The occasional persistent cases do well on 1-2000 permanganate irrigations.

The vagina is not a locus of gonorrhea, but becomes irritated and its secretions are increased by the flow of infectious material from the cervix. The acidity of the secretion is diminished and döderleini bacilli disappear.

The cervix is infected in the majority of cases, and if seen early, the process may be cut short by use of the actual cautery. After the application of the cautery the upper vagina is filled with boric acid. The subsequent treatment consists in cleansing the vagina of all secretion and mopping the entire canal with 1% lactic acid solution, applying the same solution to the endocervix; after which a suppository of milk sugar made into a stiff dough with a culture of lactic acid bacilli is introduced. This replaces to a certain extent the döderleini bacilli which have disappeared.

THE TREATMENT OF EPITHELIOMA BY RADIUM

DR. RUSSELL H. BOGGS

Radium will cure a larger percentage of epitheliomata, with less destruction of tissue, leaving practically no scar or deformity, with fewer chances of a recurrence, than any other method. This is true of both basal and squamous cell epithelioma. Epithelioma or epidermoid cancer, like other types of cancer, cannot be cured unless there is entire destruction of all the cancer tissue.

The indiscriminate use of caustics, electric coagulation, x-ray, radium or incomplete removal by surgery is to be condemned. Until lately many of the epitheliomata have been treated very inefficiently by one of the methods mentioned, but now even the patients realize that inefficient treatment will finally lead to a fatal termination.

The prophylactic treatment is by far the most important and necessitates not only the education of the medical profession but also of the laity of the necessity of complete removal of all excrescences, such as warts, or degenerated moles; the removal or correction of any irritation to the skin or mucous membrane; the proper treatment of cracked lip, persistent spots of eczema and leucoplakia.

There are several types of basal cell epithelioma, but rodent ulcer is the most common. It develops from the basal cells of the malpighian layer of the skin. It occurs on the face, neck and scalp at muco-cutaneous junctions, especially about the eye, nares and ears. As a rule, it starts as a flat papule or smooth wart. After a period of time it ulcerates and gradually destroys the tissues down to the bone or muscle. The base is usually covered with granulation tissue. The edges are indurated, raised and usually nodular.

The prognosis of both basal and squamous epithelioma varies according to the prospect of its complete removal. If the lesion is confined to the skin nearly every case can be cured. If basal epithelioma is not treated until bony structure or cartilage is involved, and if the squamous type is not treated until glandular metastases have occurred, the prognosis is grave.

Excision has almost been replaced by the use of radium in the treatment of rodent ulcer or basal cell epithelioma. It is a well-known fact that if a rodent ulcer is completely excised a permanent cure will result, but end results are better by radium without leaving a scar. This is important in some locations, such as the nose, eyelid, etc., where a surgical operation is difficult and the resultant deformity is objectionable.

A lethal or cancer dose in the treatment of both basal and squamous cell epithelioma must be given in order to cure permanently the lesion. An erythema dose will usually eradicate basal cell epithelioma or rodent ulcer, while it requires at least two or three times this amount in order to destroy squamous cell epithelioma.

In the past many have collected data and compiled statistics of cases of epithelioma treated by radium and the x-ray, but as most of the cases, both basal and squamous cell, were usually only given an erythema dose instead of a cancer dose, the conclusions drawn were that basal cell epithelioma could be permanently cured by radiation, while the treatment in the squamous cell type was not very successful. It is really more important to use radium in the treatment of squamous cell epithelioma than basal cell, because basal cell epithelioma can be cured in a large percentage of the cases by other methods, such as electric coagulation or excision. The end results by excision of squamous cell epithelioma of the mouth, lip and throat, even with radical dissection of the glands of both sides of the neck, have proved disappointing except in the very early cases. When radium is employed giving a lethal dose to all the cancer-bearing area, employing either radium or deep x-ray therapy in conjunction with imbedding radium needles into the growth and into the lymphatic nodes which remain after surface application, it will cure more cases of squamous epithelioma of the mouth and throat without the loss of tissue and deformity and with less inconvenience to the patient than excision. No one should attempt to treat a squamous cell epithelioma by only giving a surface erythema dose. This has accounted for the reports that epithelioma of the tongue, tonsil and buccal mucous membrane did not respond to radium, while sarcoma of the tonsil and basal epithelioma could be cured by radium and the x-ray.

Seventeen or eighteen years ago when we began to treat lesions of the mouth and throat by x-ray, it was after the surgeon had removed as much of the local disease as was possible and in many cases a block dissection of the neck was performed. The cases referred for postoperative raying were the late cases in which the center of the disease had been removed. Both the surgeon and radiologist expected radiation to destroy the remaining cancer cells. Both were disappointed because neither realized that cutting out the center of the disease never cured a patient, but hastened the cancer process and never afforded any palliation. In fact, the patient was in a much worse condition to derive the full effect from radiotherapy than before the operation. Secondly, the radiation was inefficient because a lethal dose could not be given by the crude methods used at that time. After years of treating postoperatively, no one obtaining uniform results, some radiologists advocated ante-operative radiation. In some of these cases, particularly cancer of the lower lip, the lesions responded promptly and the patient was clinically cured without operation. Later, when the local lesion was treated with radium and the adjacent lymphatics of both sides of the neck with either deep x-ray or radium packs, the results were so much better that many considered radium primarily in the treatment of all cancers of the lip and buccal cavity. During the past three years better results have been obtained by imbedding radium in cancer of the mouth and throat. Some advocate a block dissection following radium treatment of the local growth, while the results seem to favor spearing any lymphatic enlargement and imbedding radium.

Cancer of the mouth and throat meets with many difficulties and this depends somewhat on the tissue which is involved. Epithelioma of the tongue involves the lymphatic glands the earliest and epithelioma of the mucous membrane of the cheek is most difficult to treat after it has invaded muscle tissue. The normal tissue here will not tolerate anywhere near as much radiation as the tissue of the tongue, floor of the mouth or tonsil. These cases involving the mucous membrane of the cheek must be treated early before muscle is involved if a cure is expected by radium alone.

Cancer of the floor of the mouth gives good results when treated in the same manner. Here radium can be inserted into the growth, under the tongue and also through the skin under the chin. Cancer of antrum has been successfully treated by opening the antrum with soldering iron as advocated by New, or by electrocoagulation and applying radium in the antrum.

Basal cell epithelioma is very often resistant to radium in cases that have been inadequately treated with the rays or with other therapeutic agents. In these cases there is usually some degeneration of the tissue, or there may be inflammatory tissue which contains no cancer cells, but will not heal with further radiation. Sometimes, in order to kill all malignant cells in very extensive or deep growths, the massive doses of rays used may cause a fibrous degeneration in adjacent normal tissues. In all these cases excision or the use of desiccation is always indicated.

It is the consensus of opinion that it is unsafe to curet squamous cell epithelioma before applying radium, as there is too much danger of producing metastases. The same is true of electrocoagulation although it is recommended by some in cancer of the lip, mouth and throat preceding radium treatment. Electrocoagulation or even imbedding radium should not be done until cell proliferation is checked by surface radiation. In all squamous cell epithelioma the adjacent lymphatics should always be irradiated to the point of skin tolerance, and if any palpable glands remain, each should be speared and radium imbedded. After a clinical cure the site of the lesion and adjacent glands should be inspected at frequent intervals for a period of three years.

It is generally conceded that fractional doses of radium are contraindicated in the treatment of both basal and squamous cell epithelioma. It is important in all cases to estimate the physiological dose and give the maximum dose at the first treatment.

Radium, when given in full doses covering all the diseased area with the proper amount of filtration and the correct distance, will cure over 95 per cent selected and between 80 and 90 per cent of unselected cases of basal cell epithelioma.

With our present-day technic over 90 per cent of early cases of epithelioma of the lip can be cured. The further advanced the disease, the smaller the ratio of cures, and if there is extensive glandular involvement the prognosis is grave.

When one chain of lymphatics is palpably enlarged, cancer cells can nearly always be found in the next chain microscopically and these patients are seldom ever cured surgically. A large percentage of these cases can be clinically cured by radiation, but naturally there will be more recurrences, this depending upon the condition of the lymphatics of the patient under treatment. Clinically, it seems to be true that certain patients have a higher resistance against the spreading of carcinoma than others. This is observed in noncachectic and cachectic individuals. It has been stated that in the tissues surrounding carcinoma there is a so-called battle zone consisting histologically of advancing carcinoma cells opposed by leucocytes and connective tissue cells. This zone seems to be absent in some patients with rapid growing cancer and in patients where the resistance of normal tissue is below par.

Frederick B. Utley, Secretary.

View Along Lackawanna Trail, Entering Dunmore, Just East of Scranton

HIGHWAY ROUTES TO SCRANTON

The Committee on Arrangements for the State Society meeting at Scranton, October 2d-5th, has received many evidences of the deep state-wide interest in the coming sessions in the metropolis of northeastern Pennsylvania.

The hotel reservations have, at this period, exceeded by far any similar requests for rooms made by our membership in connection with former meetings in the Electric City.

Numerous inquiries have been received as to garage reservations, indicating that very many of the society's physicians and their families will take advantage of the exceptional opportunities to motor to the northeastern corner of the state in the early days of October, at a time when the lingering blooms of summer and the early promise of a golden autumn present an everchanging view.

The highways to the Scranton meeting should be at their best in October. Whether the coal metropolis is approached from the eastern or western part of the state, the traveler is sure to proceed over a portion of the Lackawanna Trail, which the Governor of the State of Pennsylvania said to the Governor of the State of New York, only a few weeks ago, was a highway that he was proud of; that it was the finest piece of road construction ever completed by the Highway Department of the Keystone State.

For the convenience and guidance of our members who will make the trip by automobile, and there are assurances that there will be hundreds of them, we are printing the most acceptable routes from points most distant from Scranton. These routes are based upon expert advice from motor clubs and it should be emphasized that they are the very best available. They have been planned to facilitate the avoidance of annoying and heartbreaking detours and with the idea of proceeding over the best maintained state highways. In some instances the routes may be longer than some of our members may have figured themselves, but in all cases it can be stated authoritatively that they are the best, based upon road conditions and considering the comfort and convenience of the traveler.

Cut out the following routes, pin them before you and be sure to take them when you start out in your automobile, with your family, for Scranton, in October:

From Erie and Northwestern Pennsylvania.—By way of Westfield, thence along the Northern shore of Chautauqua, to Jamestown; thence to Salamanca, Olean, Wellsville, Hornell, Bath, Corning, Elmira, Owego, Binghamton; thence over the Lackawanna Trail into Scranton. At the present time there is a detour of about six miles between Owego and Union which cannot be avoided in coming in from Erie and the northwest.

From Pittsburgh and Western Pennsylvania.—Via the Lincoln Highway to Bedford, Chambersburg, thence over the William Penn Highway to Carlisle, Harrisburg, Lebanon, Reading, Allentown, thence to Bethlehem, Easton, Bangor, Portland, Delaware Water Gap, and over the eastern or southern end of the Lackawanna Trail to Scranton. This route will also

IN THE HEART OF SCRANTON

apply from Harrisburg to Scranton. It will also apply from Chambersburg to Harrisburg; then follow the above route.

From Philadelphia to Scranton, we should advise traveling by the way of Norristown, Collegeville, thence over the Perkiomen Valley route to Pennsburg, Emaus, Allentown, Bethlehem, Easton, Bangor, Portland, Delaware Water Gap, and thence into Scranton over the Lackawanna Trail.

There may be some question among some of our members as to the length of the route from Harrisburg to Scranton. This route is made necessary on account of construction work and repairs on the other routes leading into Scranton. From Harrisburg to Sunbury there is a very bad detour, and a detour between Sunbury and Wilkes-Barre. The route through Tamaqua, Pottsville, and Hazleton has also several detours.

If our members will follow the above routes as outlined, we are sure that they will be perfectly satisfied with their trip, regardless of the additional mileage, which does not amount to more than forty miles.

IN MEMORIAM

DR. GEORGE W. METZGER

Dr. George W. Metzger, long a resident of Hughesville, a member of the Lycoming County Medical Society, and the oldest practitioner in Lycoming County, died July 7th, in his eighty-second year, after an illness of five weeks from angina pectoris. Dr. Metzger was one of the foremost physicians in the county, and up to the time of his illness, although well advanced in years, was active in the practice of his profession, and was widely known, not only to the profession, but among the people, as an able physician.

The history of the Metzger family is filled with interest, dating back as it does to Revolutionary days. His father's parents came to this country at the time of the Revolutionary War and settled in the eastern part of Pennsylvania. J. George Metzger, his father, was a farmer, and his mother before her marriage, was Susan Deitrick, whose parents came here in old pioneer days and settled in Columbia County.

Dr. Metzger was born in Black Hole Valley, Clinton Township, Lycoming County, in January, 1841. In the year of 1861 he was a student at Williamsport Dickinson Seminary, but left the seminary to volunteer in the Union Army when the Civil War broke out, enlisting for a period of three months. He served four. Following his discharge from the army, he attended Susquehanna University at Selinsgrove, Pa. He entered the University of Pennsylvania Medical Department, from which he was graduated, receiving his degree in 1866. He at once settled down to the practice of medicine in Hughesville, and has been active in his profession ever since, until his last illness, a period of nearly sixty years.

Dr. Metzger was married to Rebecca Beeber of near Montgomery, on May 28, 1867, and in May of this year the couple celebrated their fifty-fifth wedding anniversary. He is survived by his widow; one brother, Elias, of near Muncy; and two daughters, M. Alta, wife of Dr. W. S. Brenholtz, of Williamsport, and Mrs. C. A. Russell, of Pittsburgh.

Dr. Metzger was an ex-president of the Lycoming County Medical Society, having completed his term of office in that position about four years ago.

The following resolutions have been adopted by the society:

Whereas, God, in His infinite wisdom, has removed our friend and co-worker, Dr. George W. Metzger, and

Whereas, Dr. Metzger, who was a general practitioner, has been blessed with a long and useful career in the profession he adorned, and

Whereas, His opinion was very much respected and appreciated by the profession and by the community in which he was one of the leading citizens, and

Whereas, Dr. Metzger, who has been an active physician until the time of his death, will be missed both professionally and as a leading citizen in the community; therefore, be it

Resolved, That we express deep sorrow for the loss of a faithful member, an able physician and a wise counselor. Be it further

Resolved, That these resolutions be spread on the minutes of the society to which he belonged, that a copy be sent to the bereaved family and a copy to the *Medical Bulletin* and the Pennsylvania Medical Journal.

A. P. Hull,
W. L. King,
G. A. Poust,
Committee for the Society.

DR. DAVID M. ROUDABUSH

Dr. David M. Roudabush was born in Clairville, Bedford County, Pa., on June 27, 1880. He was graduated from the Hahneman Medical College in 1906 and soon after his graduation located in Altoona. He continued the practice of medicine in that city until August, 1921, when he located in Williamsport. On July 3, 1922, he was accidentally electrocuted at his home, when he came in contact with a live and overcharged wire.

In his memory the Lycoming County Society has adopted the following resolutions:

Whereas, That mysterious change which we call death, suddenly and without warning claims another member of our society, and

Whereas, It has been the custom of the society to honor the dead and sympathize with the living; therefore, be it

Resolved, That the members of the Lycoming County Medical Society extend to the bereaved family our heart-felt sorrow and sympathy, and be it

Resolved, That these resolutions be spread upon our minutes, and a copy be presented to the family and to the Pennsylvania Medical Journal.

W. F. Kunkle,
W. E. Delaney,
W. H. Follmer,
Committee for the Society.

AMOUNT OF OPIATES USED IN LEGITIMATE PRACTICE OF MEDICINE

The amount of opium required in the practice of medicine, Alexander Lambert, New York (*Journal A. M. A.,* May 20, 1922), says depends on whether we calculate by the amount of codein used only among hospital patients, or whether we calculate on the amount of codein required in hospital and dispensary patients together. Between 37,500 and 56,000 pounds is probably nearer the truth. Calculating from the 77 per cent dispensary patients and 23 per cent hospital patients combined, we have 23 per cent or 2,385,000, or 545,550 patients as hospital patients, requiring yearly, at 155 grains for each patient, 12,796 pounds of opium, and 1,839,451 patients as dispensary patients requiring, at 102 grains each 28,333 pounds of opium, or a total of 41,129. To assure an ample amount for even an increased demand of codein, 45,000 pounds of opium may well be considered an abundant amount of opium to be imported each year for medical use. This is less than one-tenth the actual amount now imported, and supports the statement of the Treasury Report on Traffic in Narcotic Drugs that 90 per cent of the amounts of these drugs entered for consumption is used for other than medical purposes. These figures do not include the practice of dentistry and veterinary medicine; but the excess of morphin obtained in making the codein beyond that required in the practice of physicians will be more than ample to supply the legitimate needs of the dentists and veterinary surgeons.

COMMUNICATION

TO THE MEMBERS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA:

The August number of the Journal contains the Scranton program, the result of the labors of the Committee on Scientific Work. How well they have succeeded, you must be the judge. The sessions are limited to ninety minutes for the reading of papers. If all the subjects submitted had been placed on the program, the Scranton session would have lasted for a full week. The committee have tried in their selection of papers and titles, to select ones that are timely and practical, so that you can carry home, for use in your daily work, knowledge that will be of service and of personal benefit to your patients. We should like to ask you if you can give three good and sufficient reasons, why you should remain away from the Scranton Session, October 3-5, 1922. Many of your confreres this year took two weeks away from their practice to take a postgraduate course at one of the medical schools in this state, and paid a substantial fee for the privilege. Did you? The program arranged for the Scranton session offers a postgraduate course of three and one-half days, without cost to you except for traveling expenses, bed and board. Has it occurred to you that our guests at this meeting, and a large number of our members, are giving of their time free for your edification and benefit. Are you going to let some of your doctor friends in your locality forge ahead and leave you in their wake, because they are willing to keep up to date in the medical sciences by taking postgraduate courses and attending medical societies? Are you? The time taken from your practice to attend the meetings of the Pennsylvania State Society, while there may be a small pecuniary loss at the time, will be returned threefold, in the form of a growing practice and eminent position in the locality in which you reside.

OUR GUESTS AT SCRANTON

WHO WILL READ PAPERS BY INVITATION IN THE SECTION MEETINGS

Medical Section

Dr. Frank Billings, Chicago, Ill.: Dr. Billings is retired Professor of Medicine at Rush Medical College, which is now the Medical Department of the University of Chicago. He is Ex-President of the A. M. A., and is now Secretary of the Board of Trustees. His selection of the subject for the Medical Section, *Methods of Physical and Functional Diagnosis Available to the General Practitioner,* is particularly timely, and truly no man is better qualified to present this subject than Dr. Billings.

Dr. Oppenheimer, New York City: Dr. Oppenheimer, Professor of Clinical Medicine at Columbia University, is well known as a cardiologist with keen ideas as to the present advanced teaching of heart affections. The physicians of Scranton have entertained Dr. Oppenheimer in the past and are very enthusiastic over the news that he is to be on our program.

Surgical Section

Dr. David Marine, New York City: It was Dr. Marine who conducted that very complete survey among the high school girls at Akron, Ohio, a few years ago, in which the minute administration of sodium iodides as a prophylactic proved its unquestionable value in the prevention or disappearance of colloid goiter in growing girls. This is a subject of greatest interest to every practitioner of medicine, and its appeal should be general and impelling to the members of the State Society.

Eye, Ear, Nose, and Throat Disease Section

Dr. Wells Eagleton, Newark, N. J.: The address on Otitic Meningitis will be of practical interest to any practitioner. Dr. Eagleton has made epochal studies in brain abscess of aural origin, has reported many remarkable cases of sinus throbosis, and is to-day doing pioneer work in the treatment of otitic meningitis.

Your attention is called to some of the special features of the program that cannot fail to appeal to the specialist, surgeon and internist. Please look over the entire program and see what appeals to you in a personal way, and then you will know what you are going to miss by not attending.

GENERAL SESSION

Tuesday, 10 A. M.

The timely subject, University Extension Postgraduate Work, that is now holding the attention of the faculties of our medical schools (and they are formulating the ground work for its adaptability to the county societies) will be most ably presented by our President, Lawrence Litchfield, and by Dr. George H. Meeker, of Philadelphia, an authority on the subject. Dr. Frank Billings, of Chicago, by invitation, will deliver an address on the Relation of the State Societies to the A. M. A.

Wednesday, 9 A.M.

After a paper on the Relation of the Mental Hospital to the Community, two symposia, with a paper on Anthrax sandwiched in between, will be presented. Lantern slides will play an important rôle in both symposia. The first, Tuberculosis and Syphilis of the Bones and Joints, and the second, Obstetrical, will cover the subjects most minutely from the standpoint of the authors. The last paper will be a moving picture of a complete cesarean section.

Thursday, 2 P.M.

Three five-minute papers—State Control of Syphilis, Diphtheria and Puerperal Sepsis—are the headliners for the last General Session, following which, Epigastric Angina will be considered, before the next two papers, which deal with the differential diagnosis of the Exanthemata and Some Parasitic Skin Diseases, lead us to the symposium on Brain Tumor, where the Diagnosis is made by Dr. Spiller and the preparation for its Methods of Approach eminently handled by Dr. Walter D. Dandy, of Baltimore, Md.

SECTION ON MEDICINE

Tuesday, 2 P.M.

Dr. Frank Billings, of Chicago, by invitation, has consented to read a paper on the Methods of Physical and Functional Diagnosis Available to the General Practitioner, after a paper on General Practice, Its Boundaries, following which The Differential White Blood Cell Count In, and Treatment of Pernicious Anemia, will be considered, followed by two papers, Importance of Fluid Intake in the Treatment of Kidney Insufficiency, and The Physiological Consideration of Nephritis.

Wednesday, 2 P.M.

A Case Report of Epidural Abscess of the Spinal Canal is the first paper, followed by two other neurological subjects, Myoclonic Attacks and Their Significance, and The Management of Mental Cases by the General Practitioner, when Dr. Bernard S. Oppenheimer, of New York, by invitation, will read a paper on the Prognosis in Myocardial Disease. Arterial Hypertension, and Clinical Determination of Heart Size are the two concluding papers.

Thursday, 9 A.M.

Differential Diagnosis of Diseases of the Pancreas, Present Status of Endocrine Therapy, Some Practical Points in Diagnosis and Treatment, Anthracosis, Clinical Aspect of Primary Carcinoma of the Lung, Pulmonary Tuberculosis and Appendicitis, and The Value of Test Meal Studies, are subjects that cannot fail to interest the Internist, and will be ably handled by the essayists.

SURGICAL SECTION

Tuesday, 2 P.M.

Perirenal Cyst, Empyema, Etiology of Postoperative Insanities, Cancer of the Tongue, A Study of 15,000 Inductions, and Spinal Anesthesia, are the subjects down for consideration at the initial session, and will open up a wide and fertile field for general discussion.

Wednesday, 2 P.M.

This session, the Surgical Section officers tell us, is going to be an unique affair, in that they are going to pull off in the heart of the goitre belt, a dry clinic on this subject, but from what I hear, a good many men are arranging to take with them to the clinic, "something on the hip" for any emergency that may arise. Be that as it may, after the exhibition of the basal metabolism apparatus, patients with adenomatous goiters will be presented, then the subject of the exophthalmic and Colloid goiter Types will be considered, and the treatment advised in these three classes. The Etiology and Prevention of Simple Goiter will be handled by the pioneer in this line, Dr. David Marine, of New York City, by invitation. The three papers following, Medical, Surgical, X-Ray and Radium Treatment of Goiter, will bring this session, *de résistance,* to a close. If you are interested in goiter, how can you afford to remain away?

OUR GUESTS AT SCRANTON

WHO WILL READ PAPERS BY INVITATION IN THE SECTION MEETINGS

Eye, Ear, Nose, and Throat Disease Section

Dr. Harris Peyton Mosher, Boston, Mass.: Dr. Mosher is professor of Laryngology at the Harvard Medical School, Boston, Mass. He has done notable work on the paranasal cells, which is familiar to all rhinologists. His discussion of *Cardiospasm* at this session will be of great interest, not alone to the specialties section, but to the surgeon and internist as well.

Pediatric Section

Dr. Clifford G. Grulee, Chicago, Ill.: Dr. Grulee has devoted himself to work in children's diseases since graduation. He has written and lectured extensively on the subject. At present Dr. Grulee is Associate Professor and acting head of the Department of Pediatrics at Rush Medical College, and Lecturer on Child Hygiene in the University of Chicago.

Dr. Harold R. Mixsell, New York City: Dr. Mixsell is the editor of the Archives of Pediatrics, and has written extensively on various diseases of children, particularly infectious diseases. He has also contributed some very important articles on infant feeding.

General Sessions

Dr. Frank Billings will deliver an address at the opening session Tuesday morning. He is the invited guest of both the General Session and Medical Section.

Dr. Walter D. Dandy, Baltimore, Md.: Dr. Dandy, brain surgeon for Johns Hopkins Hospital has written extensively. His paper in the symposium, Thursday afternoon, on *Brain Tumor* is looked forward to with keen interest by the surgeon and neurologist, as he is a fearless operator, and has performed many successful operations in this class of cases.

Thursday, 9 A.M.

Longevity of Plates and Other Foreign Bodies in the Treatment of Fractures of Long Bones, Chemical Dyes in the Treatment of Gonorrhea, Fractures Near the Ankle, Technique of Prostatectomy, Peritonitis Following Operations for Cholecystitis of Influenzal Origin, Treatment of Cerebrospinal Syphilis by Lumbar Puncture Following Intravenous Administration of Neoarsphenamin, and the Importance of Physical Factors in the Prognosis of Renal Infections, are all live subjects, and should receive careful consideration and discussion.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, 2 P.M.

Eye Symptoms in a Case of Oxycephaly, Some Neuro-ophthalmic Studies of War Injuries, Diagnosis of Palsies of the Extra-ocular Muscles, Etiology of Uveal Disease, Practical Points in the Extraction of Cataract, Some Observations on Orbital Growths, and Orbital Affections Depending Upon Disease of the Accessory Sinuses. The opening session, as you see by the above subjects, is given over entirely to consideration of diseases of the eye, and will be called the Eye Session.

Wednesday, 2 P.M.

Dr. Harry Peyton Mosher, of Boston, will by invitation of the Section for its Method of diospasm, and the discussion will be opened by Dr. Chevalier Jackson, of Philadelphia. This is the first paper of the afternoon, and members should arrange to be through with their lunch so they can be present at the appointed hour. The rest of the afternoon is to be devoted to a Symposium on Headache, from the Standpoint of the Ophthalmologist, Otologist, Rhinologist and Neurologist. The men who are to present these papers and the ones down to discuss them assure the Section of a most profitable afternoon and will prove a rare treat to the members of other sections who can attend.

Thursday, 9 A.M.

Dr. Wells Eagleton, of Newark, N. J., by invitation, will address the Section on Otitic Meningitis. He is a pioneer in this line of work and is bound to attract a large crowd outside the Section members. The Internists will be especially interested in his paper. Atypical Mastoiditis, Early Diagnosis and Treatment of Malignant Disease of the Larynx, with lantern slides, Voice Production, Complete Tonsillectomy, and Some Principles Involved in the Bronchoscopic Removal of Foreign Bodies, complete the subjects down for discussion in this Section. All the papers are practical, and we predict that the Eye, Ear, Nose and Throat Section meetings, will be packed. Who can say that it was not one of the best arranged, and at the same time most scientific program presented by the Section officers for consideration of its members?

SECTION ON PEDIATRICS

Tuesday, 2 P. M.

Faulty Posture as a Cause of Obscure Digestive and Nutritional Disorders, with a Report of Treatment of Fifty Cases, Preventable and Correctible Deformities of Childhood, Maldevelopment Due to Oro- and Nasopharyngeal Obstruction, Napkin Eruption of Jacquet (Lantern Slides), and Some Acute Abdominal Conditions in Childhood, are the subjects down for presentation and discussion at the initial session of this Section.

Wednesday, 2 P. M.

Behavior Disorders in Children, Observations on the Nature of Essential Epilepsy, and Raynaud's Disease in Children, are the three papers that will precede that of Dr. Clifford G. Grulee, of Chicago, on Diagnosis and Treatment of Pylorospasm in Infancy (lantern slides). Dr. Grulee has written and lectured extensively on children's diseases, and will need no introduction to the Section members. The subject of Rickets will be considered in the two following papers: Nervous Manifestations of Rickets, Etiology and Treatment, which will end the second session of this Section.

Thursday, 9 A. M.

Health and Nutrition Work Among Pre-School Children, Medical Care of Dependent Children, The Importance of Closer Obstetric and Pediatric Relations, are down for the final meeting for consideration, when Dr. Harold R. Mixsell, of New York City, will entertain the members with his Three Years' Experience With Thick-Cereal Feeding in Malnutrition and Allied Conditions in Infancy. Dr. Mixsell is the Editor of the Archives of Pediatrics and has written extensively on the subject. Observations of Infant Feeding from the Vienna and Berlin Clinics, and Nasal Diphtheria, are the two papers that will end this most interesting and helpful meeting of the Section on Pediatrics.

T. G. Simonton, *Chairman,*
Committee on Scientific Work.

RESTAURANT

The Thirteenth Regiment Armory in Scranton is located on the corner of Adams Avenue and Myrtle Street, and is some distance from the hotels and restaurants of the central city. The manager has entered into an arrangement with a well-known caterer to conduct a restaurant in the Armory and furnish refreshments, including salads, cold meats, sandwiches, pies, cake, ice cream and beverages. This restaurant will be open from 11 a. m. to 2 p. m., and will make it convenient for all to remain at both morning and afternoon sessions.

PROGRAM

SEVENTEENTH ANNUAL CONFERENCE OF SECRETARIES

Tuesday, October 5, at 5 P. M.

AT HOTEL CASEY

Chairman—Jno. M. Quigley, Secretary, Clearfield County Medical Society.

"SHALL THE COMPONENT SOCIETIES REMIT FROM THEIR RESPECTIVE TREASURIES THE ANNUAL STATE SOCIETY TAX FOR ALL MEMBERS?"

Harry W. Mitchell, Trustee and Councilor, Seventh District.

Discussion to be opened by Secretary Stevens, Bradford County Medical Society.

"OPPORTUNITIES OF THE MEDICAL SOCIETY SECRETARY TO SERVE HIS FELLOW MEMBERS."

Walter F. Donaldson, Secretary, The Medical Society of the State of Pennsylvania.

Discussion to be opened by Secretary Kinzer, Lancaster County Medical Society.

"OPPORTUNITIES OF THE COUNTY MEDICAL SOCIETY SECRETARY TO ASSIST IN MOLDING AND ENFORCING PUBLIC HEALTH MEAURES."

Frederick L. Van Sickle, Executive Secretary, The Medical Society of the State of Pennsylvania.

Discussion to be opened by Secretary Myers, Bucks County Medical Society.

"OPPORTUNITIES OF THE COUNTY MEDICAL SOCIETY SECRETARY TO AMALGAMATE THE INTERESTS OF THE MEDICAL PROFESSION AND THE GENERAL PUBLIC."

Cyrus Lee Stevens, Athens.

Discussion to be opened by Secretary Coffman, Franklin County Medical Society.

Dinner at 6:45 p. m. Component society secretaries, officers of the State Society and members of the Board of Trustees, $1.00 per plate. Other members of the State Society will be welcome at $2.50 per plate.

PRIMARY ACTINOMYCOSIS OF SKIN

Surgical solution of chlorinated soda (Dakin's solution) gave prompt results in the case cited by M. J. Baskin, Alliance, Neb. (*Journal A. M. A.*, May 6, 1922), after the administration of potassium iodid, internally, and boric acid, locally, had failed to give results. The lesion is covered with gauze which is kept constantly saturated with the solution. At intervals, moist heat is applied over the gauze. This results in the decomposition of the solution with the liberation of free chlorin, and to this Baskin attributes his results.

Dr. O. Pine queries:—Why is a medical society banquet so solemn an affair? Cannot the brethren relax the professional facies?

LAWRENCE LITCHFIELD, M.D.

THE PENNSYLVANIA
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SEPTEMBER, 1922

EDITORIALS

PRESIDENT-ELECT LITCHFIELD

Lawrence Litchfield, President-elect of the Medical Society of the State of Pennsylvania, was born in Grand Rapids, Michigan, November 8, 1861, the son of General Allyne Cushing Litchfield (U. S. V.), and Susan Cornelia Carver. His A.B. degree was received at Harvard University, from which he was graduated in 1885, being chosen a member of Phi Beta Kappa. He studied medicine in Harvard Medical School, but finished and obtained his medical degree at Bellevue Hospital Medical College, New York City, in 1888. Since that time Dr. Litchfield has remained an active student, having in the course of his postgraduate work, frequently visited the clinical centers of Europe and America. He began the practice of general medicine in Pittsburgh in 1889, continuing until 1917. Since his discharge from the United States Army in 1919, he has limited his practice to that of consultant internist. At various times during his medical career he has been a member of the visiting staff of the Western Pennsylvania Hospital, Pittsburgh Hospital and Pittsburgh Hospital for Children, and of the consulting staff of the Pittsburgh Eye and Ear Hospital, St. John's Hospital and St. Joseph's Hospital. During the World War he served as Chief of the Medical Service in the base hospital at Camp Lee, Virginia, and at Camp Grant, Illinois, with the rank of Major.

Dr. Litchfield's services to his home city have not been limited to those peculiar to his profession. He has served as a member of the Pittsburgh Morals Efficiency Committee and as a member of the Executive Committe of the Voters' League. He is an ex-president of the Allegheny County Medical Society, the Pittsburgh Academy of Medicine and the Pittsburgh College of Physicians. He was a member of the Executive Committee of the International Tuberculosis Congress in 1908, and of the International Congress of Hygiene and Demography in 1910, and is at present a Fellow of the Association of American Physicians, the American Climatological and Clinical Association, and the American College of Physicians.

Dr. Litchfield has served the Medical Society of the State of Pennsylvania as Chairman of the Medical Section, for four years as Chairman of the Committee on Scientific Work, and also as a member of several standing committees. During his year as President-elect of our Society, he has established a record by his response to demands upon his time and energy. Since his election in October, 1921, President-elect Litchfield has attended more than a score of meetings of component county medical societies.

In 1898 Dr. Litchfield was married to Miss Ethel Herr Jones, of Pittsburgh. They have two daughters and one son. The son, Lawrence Litchfield, Jr., is a graduate of the United States Naval Academy at Annapolis, and is at present taking a scientific course at Harvard University. The elder daughter is a graduate of Vassar College and is at present studying music abroad. The younger daughter is studying in New York. Mrs. Lawrence Litchfield is a pianist of high order, who sacrificed a musical career for a member of the medical profession. W. F. D.

RADIO AND A MIND DISEASED

In due course of time, all diversions, when sufficiently emphasized to become popularized, find their way into hospitals for mental diseases.

Music, which Pope immortalized by his oft quoted words, "Makes sickness ill at ease and drives madness to despair," has been looked upon by the laity as an agency for combating mental illness and in many instances its therapeutic value has been too greatly emphasized by the lay writers and those unfamiliar with the treatment of the mentally diseased.

It is true that music has its charms, but it is no great feat for the greater percentage of mental patients to concentrate sufficiently to enjoy its rendition and to possess such mentality that they may appreciate its beauties. But to say that music erases the written troubles from the brain is far-fetched, for at the most it can be regarded only as a diversional agency and its therapeutic value is placed on a par with such other diversional activities.

The radio is now heralded by the press (*Literary Digest,* July 15, 1922) as bringing music from the air and, according to the *Evening Mail,* to the inmates of Central Islip, Long Island, "it was a miracle. Otherwise sadness faded from faces, where sadness nearly always rests. No quieter or more attentive audience ever listened to the famous opera."

Our experience at the Danville State Hospital showed an audience with an air of inquisitiveness among the less mentally deteriorated type and that same appreciation which is found at the hospital movies, symphony concerts or vaudeville performances. There was an appreciable break in concentration, however, which is not uncommon during the rendition of a twenty-minute victrola concert. My impression was that, so far as the average percentage of the patients was concerned, the performance could just as well have been a victrola concert. This, however, may have been influenced by static disturbances, and unless the apparatus can be perfected to eliminate this distracting feature considerable time must elapse before radio, taken collectively, will be a successful diversional agency in a mental hospital. Furthermore, the laity should be advised that radio will not cure mental diseases, or the hospital administrator's life will soon be burdened by a thousand foolish questions similar to those which accompanied the x-ray and the wholesale extraction of teeth. J. A. J.

CANCER OF THE LIP

Much general interest has been shown recently in cancer of the lip as evidenced by a symposium upon this subject in the Section on Dermatology and Syphilology of the American Medical Association, as well as by the publication of numerous scientific papers upon the same subject.

It is almost universally acknowledged that this is a preventable disease, by eliminating all forms of irritation, such as excessive smoking, traumatism, constant irritation of any kind, or even excessive exposure to the sun's rays and wind. It is also acknowledged that when any sore upon the lip lasts more than a few weeks the diagnosis of carcinoma must be considered.

It is also almost generally accepted that radiation by means of x-rays or radium, or both, should form a part of any other form of treatment of cancer of the lip. The other forms of treatment would be the destruction of the diseased tissue by electrocoagulation as recommended by Pancoast, Clark and Pfahler, or excision as advised by Bloodgood and other surgeons. Since the results from the use of radiation and electrocoagulation seem to be superior, it would seem that if such a course of treatment could be recommended, more patients could be induced to apply for early treatment, and the number of cancer deaths reduced by just this percentage. If treated early, all cases seem to get well. All authors urge the importance not only of treating the local lesion by means of radium or the x-rays, but of treating the lymphatics which drain this area, particularly the submental and submaxillary group of lymphatics. Then too, thoroughness is as important in radiation as in surgery.

Very frequently the patients fail to consult their family physician until the disease is far advanced. At other times the fear of an operation leads the patient to be treated by a quack, and the physician is consulted only after the quack's supposed cure is found to be a failure, and the disease has recurred locally or extended into the lymphatics, and the case is often hopeless. Occasionally, the sentimental interest of the family physician, because of his intimate acquaintance, makes him fear the truth, and valuable time is lost. In such cases, a good rule would be, when in doubt, to consult with some one who has had a wide experience with these lesions, and thus get treatment started at a time when the patient can be sure of getting well. G. E. P.

THE TREATMENT OF GAS GANGRENE

Gas gangrene, also known as infectious emphysema, is due to infection by the *bacillus aërogenes capsulatus* of Welch. The natural habitat of this organism is fecal matter. It is an anaërobe and spore bearing, and may be recovered without difficulty from human fecal matter by placing a little in a tube of melted Russell's double sugar agar medium and heating to boiling, which kills all the germs except the spores of the Welch bacillus. The medium is then cooled and some melted medium poured on top of it to exclude the air. The germ grows rapidly and when incubated ten or twelve hours usually generates so much gas that some of the medium is forced out of the tube.

In 1917 Dr. C. G. Bull, of the Rockefeller Institute for Medical Research, perfected an antiserum for the treatment of gas gangrene. Previous to that time the infection very rapidly resulted in death unless immediate amputation was performed, which procedure too often was not resorted to quickly enough on account of delay in making the diagnosis.

There are six aids to the diagnosis, viz: history, odor, crepitation of gas in the tissues, rapid gangrene, the x-ray and the microscopic examination of a smear. In addition there is usually high temperature with delirium, or there may be shock with subnormal temperature, cold sweating and very feeble, rapid pulse. The history may show that fecal matter has gained access to a deep wound. The odor is characteristic, somewhat different and more offensive than that of ordinary gangrene. Crepitation is almost pathognomic, but unfortunately is not always present. However, with a history of the possible entrance of fecal matter into the wound, with the characteristic putrid odor and with gangrene developing in 24 to 48 hours, an x-ray picture should be taken which will show the gas very clearly, if present. If there is discharge from the wound, smears stained by Gram's method will show very large, Gram-positive bacilli, many of which contain spores.

Upon making the diagnosis, the antitoxin, heated to body temperature, should be immediately administered intravenously, the first dose 200 c.c. (170 units), subsequent doses of 100 c.c. (85 units) at intervals of eight hours until 800 c.c. have been given.

After the first injection (or before, if the serum is not at hand) the infected limb, if gangrene has not already developed, should be opened with many deep longitudinal incisions two or more inches in length. The infected muscles (the germ has a predilection for muscle as the tetanus bacillus has for nerve) will be seen to be of a peculiar brownish color and soft and mushy. All of this mushy muscular tissue must be scooped out.

If gangrene has already developed it will not progress after the first injection of the serum, but a line of demarcation will appear and amputation can be performed later.

This editorial was suggested by the fact that three cases of gas gangrene have occurred in Harrisburg in the past three months. The first case was that of a man who fell thirty feet from a scaffold, sustaining a compound fracture of both bones just below the elbow and a fracture of both bones just above the wrist. When first seen, the four fragments were protruding from the wound, which was filled with leaves, grass and dirt. The radial pulse was felt distinctly. The wound was thoroughly cleansed, tincture of iodin applied generously and the fractures reduced. The following day there was gas crepitation throughout the entire forearm and lower half of the upper arm, with high fever and delirium. The organisms were seen in smears of the discharge and later obtained by culture.

The antitoxin (known as the "tetanus perfringens antitoxin") was procured through the assistance of the Rockefeller Institute from a commercial biological house, but before its arrival the gas crepitation had progressed into the shoulder. It was administered as described above, with very rapid improvement of the general condition, the delirium subsiding after the first injection and the temperature reaching normal after the second. The entire forearm became gangrenous with a line of demarcation at the elbow. The arm was later amputated above the elbow and the patient recovered rapidly. A month later the organisms were cultured from the stump, the man being in perfect health.

The second case was that of a girl, 7 years of age, who fell from a fence, a piece of glass penetrating her forearm. The following day there was high fever and great swelling of the arm. An x-ray was taken on account of the swelling and showed the gas in the tissues. Before the arrival of the serum, crepitation appeared and progressed to the shoulder. The arm was laid open and the serum administered in doses of half the amounts given above. The arm became gangrenous with the line of demarcation above the elbow and was later amputated below the shoulder, with complete recovery.

The third case was that of a farmer 60 years old, whose knee was cut by a manure spreader. The physician in attendance stated that after the accident the pulse could be plainly felt in the dorsalis pedis. The following day the patient was admitted to a hospital in a condition of profound shock—pulseless and in a cold sweat. His leg was gangrenous from the knee down and his thigh red and swollen, but there was no crepitation. The gangrene was spreading rapidly. The history, odor and rapid gangrene suggested infection by the Welch bacillus. To confirm the diagnosis an x-ray picture was taken. This showed gas throughout the entire thigh, buttocks and over the lower abdomen. The organisms were seen in a smear of the discharge. Two hundred c.c. of antitoxin were administered immediately upon receiving the positive report of the fluoroscopic examination, but the patient died shortly after. G. R.M.

THE TRUE ATTITUDE OF THE PHYSICIAN TOWARD DRUGLESS THERAPISTS

It is a hopeful sign and one which should be of interest to the medical profession, that in the past year many lay magazines have considered the subjects of osteopathy, chiropractic and other forms of drugless therapy in their issues. The general public has considered the medical profession as narrow-minded, antagonistic and unalterably against any cult that desires to practice any form of the healing art other than regular medicine.

This attitude is not the true one of the profession, and we are pleased to see articles appear in the lay press which present in a true and dispassionate way the methods of practice which we as the medical profession have been accused of opposing from a professional viewpoint. The attitude of the profession is not against any one practicing whatsoever they wish providing they have the proper preliminary and premedical education. It is necessary to have this preparation in order to understand the human body both in health and disease prior to the practice of any form of medicine or drugless therapy.

It is for the purpose of calling the attention of our readers to the willingness of lay journals to present to the world in a proper manner the facts concerning drugless therapy that we direct their attention to an article which appeared in the July number of the *Atlantic Monthly* under title of "Osteopathy, Chiropractic, and the Profession of Medicine," by Channing Frothingham. This article should be read carefully by every member of the medical profession in this state, as it presents many conclusions which are illuminating. Under osteopathy he says:

> "The present knowledge in regard to osteopathy seems to warrant its being considered of value in the treatment of a limited number of abnormal conditions, but it does not warrant looking upon this profession as being a worthy substitute for the established facts in general medical science. Therefore, osteopathy should take its place in the science of medicine as one of the various therapeutic procedures available for the treatment of disease. Like other therapeutic agents, its use should be limited to those cases in which it is of value."

As physicians we should sift the wheat from the chaff and should not be willing either to accept or oppose a principle until thoroughly investigated, and yet we feel that if preliminary and premedical education were adopted for all in the state, that many who now are and possibly will in the future practice this branch, will eventually become a part of the practice of medicine. Under chiropractic Channing Frothingham says:

> "The medical profession, on its part, should not be intolerant of the study and application of any new therapeutic agent, simply because those who advocate it present their claim with more enthusiasm than is justified by the facts, or because the advocates are not trained in general medical knowledge. It is only too well established that methods for the treatment of disease have been taken up with enthusiasm by the medical profession, only to be eventually discarded as either useless or even harmful to the patient."

True, for all time in the past the medical profession has been slow to adopt any new theory until it has been proved of value, and we still should be of open mind to learn whether chiropractic has anything of value which should be practiced for the treatment or cure of disease. If we are to be tolerant of every new fad that is introduced without investigation, the medical profession will soon lose caste to a greater extent than it has in the past. It is equally true that the practice of medicine is not a complete science, nor will it ever be, and continued investigation and practice leads us from one stage to another in search of truths which will relieve human suffering. He further says:

> "In regard to the public health, the public should also be intolerant of anyone who takes the place of the physician, unless trained in general medical knowledge. For, although an individual may gamble with his own life regardless of public opinion, he has no right, so far as the public is concerned, to be a factor in the spread of contagious diseases, such as diphtheria, scarlet fever, syphilis, typhoid fever, plague, and the rest, with resulting death and suffering for the public. Such a condition may and does arise, if the public allows individuals to treat diseases who are improperly trained in recognizing them. For a patient may well think that he has consulted a properly qualified physician, when he has been to one of these individuals allowed by law to treat diseased conditions; and therefore considers that his responsibility to the public has been discharged."

Such should be the stand not only of physicians, but of every thoughtful-minded individual in society who considers the protection of public health as of most vital importance in everyday life. In concluding this article the writer states:

> "The public should demand that all those who are to practice the healing art, in any manner, as a profession, should have a general knowledge of the established facts in medicine, and the relation of special diseases to the public health. In other words, in all the states there should be one general board of registration in medicine, and the standards established by that board should be high. With the education necessary to pass such a board, the sincere therapeutic enthusiast, be he osteopath, chiropractor, electrotherapeutist, faith healer, or herb doctor, will probably

not do much harm to the individual, or be a source of danger to the public health."

Mindful of the continued accusations which come to the profession, is it not best for us to stand upon the principle, which has ever been true in medicine, that the individual rights of the public are to be conserved, but that the practice of the healing art should never be placed in the hands of any but those thoroughly educated and those who have knowledge such as renders them of value in the healing of the sick?

DIAGNOSIS AND THERAPEUSIS

It is well to keep in mind that therapeutics is the capstone of the medical edifice—the fruitage of the tree of medical knowledge and practice. Anatomy is a cold-blooded description of structure; physiology tells how structure behaves when it is healthy, and pathology when it is not. Diagnosis is a careful attempt to find out exactly where the mutation from physiology to pathology is located; and etiology is a knowledge, or surmise, as to what evil agent produced the mutation.

These are the foundation stones; the brick and mortar in the body of the medical building; the roots and branches of the medical tree. In and of themselves, practically they are useless—"the sounding brass and tinkling cymbals of science"—but, indissolubly connected with a well-founded therapeusis, they are of inestimable value. The man who practices medicine for the good he can do his patients, has the assurance of faith in scientific, progressive therapeutics. F. C. H.

EX LIBRIS MEDICI

THE DOCTOR OF THE OLD SCHOOL

"So one of your readers thinks that there are no good doctors in books! Well, he ought to read about some. But perhaps he doesn't read books?"

"Well," we said, "it does seem as though those you find interesting are rather to be made fun of than to be appreciated. Why not give us a sample of the real thing for a change?"

"Why didn't he read 'Dr. Thorne'? He's the real thing, but I suppose too much so to be more than commonplace. Your reader, no doubt, wants the heroic type. Well, here he is. Let me introduce Dr. MacLure from Drumtochty, a good friend of Ian Maclaren."

As he said this he took from his pocket a small volume, upon the cover of which we read "Beside the Bonny Brier Bush," and began to turn over the pages.

"You know how it is when a great man is presented to make an after-dinner speech? The toastmaster always begins by saying, as though nobody had ever said such a thing before, 'We have with us this evening, one who needs no introduction to any audience, etc.' Well, that is the way one has to present Dr. MacLure; everybody knows him, everybody loves him, it is impossible to speak of him with sufficient appreciation without being fulsome. You don't know him? Why, man alive, where have you been these last twenty-five years? Oh, you have heard of him, but never met him! Well, I'm glad that I brought him along. There are many like you that put off enjoying a good thing because they can have it any time, and so never get it. To have read this book is to have enjoyed a new life for a time; to have visited a new and rare country; to have spent a delightful vacation among unusual real people unspoiled by contamination with the town. When it is finished, you close it with a sigh, and you return to your ordinary vocation with the feeling of having been elevated and ennobled by contact with things ideal, yet real. You have been brought into close contact with men to whom life is serious in a degree beyond ordinary comprehension, and their manner of looking at it cannot fail to impress you. Here are a few extracts, but if you can hear them without being impressed, and without moisture in your eyes, you are different from others of your kind:

> It was impossible for a doctor to earn even the most modest competence from people of such scandalous health (as those of Drumtochty) and so MacLure had annexed neighboring parishes.
>
> One horse could not do the work of this man, but we liked best to see him on his old white mare, who died the week after her master, and the passing of the two did our hearts good. It was not that he rode beautifully, for he broke every canon of the art, flying with his arms, stooping till he seemed to be speaking into Jess's ears, and rising in the saddle beyond all necessity. But he could ride faster, stay longer in the saddle, and had a firmer grip with his knees than anyone I ever met, and it was all for mercy's sake. When the reapers in harvest time saw a figure whirling past in a cloud of dust, or the family at the foot of Glen Urtach, gathered round the fire on a winter's night, heard the rattle of a horse's hoofs on the road, or the shepherds out after the sheep, traced a black speck moving across the snow to the upper glen, they knew it was the doctor, and without being conscious of it, wished him Godspeed.
>
> Before and behind his saddle were strapped the instruments and medicines the doctor might want, for he never knew what was before him. There were no specialists in Drumtochty, so this man had to do everything as best he could, and as quickly. He was chest doctor, and doctor for every other organ as well; he

was accoucher and surgeon; he was oculist and aurist; he was dentist and chloroformist, besides being chemist and druggist.

It was often told how he was far up Glen Urtach when the feeders of the threshing mill caught young Burnbrae, and how he only stopped to change horses at his house, and galloped all the way to Burnbrae, and flung himself off his horse and amputated the arm and saved the lad's life.

No one sent for MacLure save in great straits, and the sight of him put courage in sinking hearts. But this was not by the grace of his appearance, or the advantage of a good bedside manner. A tall, gaunt, loosely made man, without an ounce of superfluous flesh on his body, his face burned a dark brick color by constant exposure to the weather, red hair and beard turning gray, honest blue eyes that look you ever in the face, huge hands with wrist bones like the shank of a ham, and a voice that hurled his salutations across two fields, he suggested the moor rather than the drawing-room. But what a clever hand it was in an operation, as delicate as a woman's, and what a kindly voice it was in the humble room where the shepherd's wife was weeping by her man's bedside! He was "ill pitten thegither" to begin with, but many of his physical defects were the penalties of his work, and endeared him to the Glen. That ugly scar that cut into his right eyebrow and gave him such a sinister expression, was got one night when Jess slipped on the ice and laid him insensible eight miles from home. His limp marked the big snowstorm in the fifties, when his horse missed the road in Glen Urtach, and they rolled together in a drift. MacLure escaped with a broken leg and the fracture of three ribs. He could not swing himself into the saddle without making two attempts, and holding Jess's mane. Neither can you "warstle" through the peat bogs and snowdrifts for forty years without a touch of rheumatism. But they were honorable scars, and for such risks of life men get the Victoria Cross in other fields. MacLure got nothing but the secret affection of the Glen, which knew that none had ever done one-tenth as much for it as this ungainly, twisted, battered figure, and I have seen a Drumtochty face soften at the sight of MacLure limping to his horse.

Mr. Hopps earned the ill-will of the Glen forever by criticizing the doctor's dress, but indeed it would have filled any townsman with amazement. Black he wore once a year, on Sacrament Sunday, and, if possible, at a funeral; top coat or waterproof never. His jacket and waistcoat were rough homespun of Glen Urtach wool, which threw off the wet like a duck's back, and below he was clad in shepherd's tartan trousers, which disappeared into unpolished riding boots. His shirt was gray flannel, and he was uncertain about a collar, but certain as to a tie which he never had, his beard doing instead, and his hat was soft felt of four colors and seven different shapes. His point of distinction in dress was the trousers, and they were the subject of unending speculation.

"Some threep that he's worn thae eedentical pair the last twenty year, an' a' mind masel' him gettin' a tear ahint, when he was crossin' oor palin', and the mend's still veesible.

"Ithers declare 'at he's got a wab o' claith, and hes a new pair made in Muirtown aince in the twa year maybe, and keeps them in the garden till the new look wears aff.

"For ma ain pairt," Soutar used to declare, "a' canna mak up my mind, but there's ae thing sure, the Glen wudna like tae see him withoot them: it wud be a shock tae confidence. There's no muckle o' the check left, but ye can aye tell it, and when ye see thae breeks comin' in ye ken that if human pooer can save yir bairn's life it 'ill be dune."

Doctor MacLure did not lead a solemn procession from the sick bed to the dining room, and give his opinion from the hearthrug with an air of wisdom bordering on the supernatural, because neither the Drumtochty houses nor his manners were on that large scale. He was accustomed to deliver himself in the yard, and to conclude his directions with one foot in the stirrup; but when he left the room where the life of Annie Mitchell was slowly ebbing away, our doctor said not one word, and at the sight of his face her husband's heart was troubled.

"Is't as bad as yir lookin', doctor? tell's the truth; wull Annie no come through?" and Tammas looked MacLure straight in the face, who never flinched his duty or said smooth things.

"A' wud gie onything tae say Annie hes a chance, but a' daurne; a' doot yir gaein' tae loose her, Tammas."

MacLure was in the saddle, and as he gave his judgment, he laid his hand on Tammas's shoulder with one of the rare caresses that pass between men.

"It's a sair business, but ye'ill play the man and no vex Annie; she'll dae her best, a'll warrant."

"And a'll dae mine," and Tammas gave MacLure's hand a grip that would have crushed the bones of a weakling. Drumtochty felt in such moments the brotherliness of this rough-looking man, and loved him.

"Ye need'na plead wi' me, Tammas, to dae the best a' can for yir wife. Man, a' kent her lang afore ye ever luved her; a brocht her intae the warld, and a' saw her through the fever when she wes a bit lassikie; a' closed her mither's een, an' it wes me hed tae tell her she wes an orphan, an' nae man wes better pleased when she got a gude husband, and a' helpit her wi' her fower bairns. A've naither wife nor bairns o' ma own, an' a' coont a' the fouk o' the Glen ma family. Div ye think a' wudna save Annie if a' cud? If there wes a man in Muirtown 'at cud dae mair for her, a'd have him this verra nicht, but a' the doctors in Perthshire are helpless for this tribble.

"Tammas, ma puir fallow, if it could avail, a' tell ye a wud lay doon this ould worn-oot ruckle o' a body o' mine juist tae see ye baith sittin' at the fireside, an' the bairns roond ye, couthy an' canty again; but it's no tae be, Tammas, it's no tae be."

"It's God's wull an' maun be borne, but it's a sair wull fur me, an' a'm no ungratefu' tae you, Doctor, for a' ye've dune and what ye said the nicht," and Tammas went back to sit with Annie for the last time.

Jess picked her way through the deep snow to the main road with a skill that came of long experience, and the doctor held converse with her according to his wont.

"Eh, Jess wumman, yon wes the hardest wark a' had tae face, and a' wud raither hae ta'en ma chance o' anither row in a Glen Urtach drift than tell Tammas Mitchell his wife wes deein'.

"A' said she cudna be cured, and it wes true, for there's juist ae men in the land fit for't, and they micht as weel try tae get the mune oot o' heaven. Sae a' said naething tae vex Tammas's hert, fer it's heavy eneuch withoot regrets.

"But, it's hard, Jess, that money wull buy life after a', an' if Annie wes a duchess her man wudna lose her; but bein' only a puir cottar's wife, she maun dee afore the week's oot.

"Gin we hed him the morn there's little doot she wud be saved, for he hesna lost mair than five per cent o' his cases, and they'ill be puir toon's craturs, no strappin' women like Annie.

"It's oot o' the question, Jess, sae hurry up, lass, for we've hed a heavy day. But it wud be the grandest thing that ever was dune in the Glen in oor time if it could be managed by hook or crook.

"We 'ill gang and see Drumsheugh, Jess; he's anither man sin' Geordie Hoo's deith, and he wes aye kinder than fouk kent;" and the doctor passed at a gallop through the village, whose lights shone across the white frost-bound road.

"Come in by, doctor; a' heard ye on the road; ye'ill hae been at Tammas Mitchell's; hoo's the gude wife? a' doot she's sober."

"Annie's deein', Drumsheugh, an' Tammas is like tae brak his hert."

"That's no lichtsome, doctor, no lichtsome ava, for a' dinna ken ony man in Drumtochty sae bund up in his wife as Tammas, and there's no bonnier wumman o' her age crosses oor kirk door than Annie, nor a cleverer at her wark. Man, ye'il need tae pit yir brains in steep. Is she clean beyond ye?"

"Beyond me and every ither in the land but ane, and it wud cost a hundred guineas tae bring him tae Drumtochty."

"Certes, he's no blate; it's a fell chairge for a short day's work; but hundred or no hundred, we 'ill hae him, and no let Annie gang, and her no half her years."

"Yir the man a' coonted ye, Drumsheugh, but ye'ill grant me ae favor. Ye'ill lat me pay the half, bit by bit—a' ken yir wullin' tae dae't a'—but a' haena mony pleesures, an' a' wud like tae hae ma ain share in savin' Annie's life."

Next morning a figure received Sir George on the Kildrummie platform, whom that famous surgeon took for a gillie, but who introduced himself as "MacLure of Drumtochty." It seemed as if the East had come to meet the West when these two stood together, the one in traveling furs, handsome and distinguished, with his strong cultured face and carriage of authority, a characteristic type of his profession; and the other more marvelously dressed than ever, for Drumsheugh's topcoat had been forced upon him for the occasion, his face and neck one redness with the bitter cold; rough and ungainly, yet not without some signs of power in his eye and voice, the most heroic type of his noble profession.

MacLure compassed the precious arrival with observances till he was securely seated in Drumsheugh's dogcart—a vehicle that lent itself to history—with two full-sized plaids added to his equipment—and MacLure wrapped another plaid round a leather case, which was placed below the seat with such reverence as might be given to the Queen's regalia.

As soon as they were in the fir woods, MacLure explained that it would be an eventful journey.

"It's a' richt in here, for the wind disna get at the snaw, but the drifts are deep in the Glen, and th'ill be some engineerin' afore we get tae oor destination."

Four times they left the road and took their way over fields; twice they forced a passage through a slap in a dyke; thrice they used gaps in the paling which MacLure had made on his downward journey.

"A' seleckit the road this mornin' an' a' ken the depth tae an inch; we'll get through this steadin' here tae the main road, but oor worst job 'ill be crossin' the Tochty.

"Ye see the bridge hes been shakin' wi' this winter's flood, an' we daurna venture on it, sae we hev tae ford, and the snaw's been meltin' up Urtach way. There's nae doot the water's gey big, and it's threatenin' tae rise but we'ill win through wi' a warstle.

"It micht be safer tae life the instruments oot o' reach o' the water; wud ye mind haddin' them on yir knee till we're ower, an' keep firm in yir seat in case we come on a stane in the bed o' the river."

By this time they had come to the edge, and it was not a cheering sight. The Tochty had spread out over the meadows, and while they waited they could see it cover another two inches on the trunk of a tree. There are summer floods, when the water is brown and flecked with foam, but this was a winter flood, which is black and sullen, and runs in the center with a strong, fierce, silent current. On the opposite side Hillocks stood to give directions by word and hand, as the ford was on his land, and none knew the Tochty better in all its ways. They passed through the shallow water without mishap, save when the wheel struck a hidden stone or fell suddenly into a rut; but when they neared the body of the river MacLure halted, to give Jess a minute's breathing.

"It 'ill tak ye a' yir time lass, an' a' wud raither be on yir back; but ye never failed me yet, and a wumman's life is hangin' on the crossin'."

With the first plunge into the bed of the stream the water rose to the axles, and then it crept up to the shafts, so that the surgeon could feel it lapping in about his feet, while the dogcart began to quiver, and it seemed as if they were to be carried away. Sir George was as brave as most men, but he had never forded a Highland river in flood, and the mass of black water racing past beneath, before, behind him, affected his imagination and shook his nerves. He rose from his seat and ordered MacLure to turn back, declaring that he would be condemned utterly and eternally if he allowed himself to be drowned for any person.

"Sit doon!" thundered MacLure. "Condemned ye will be suner or later gin ye shirk yir duty, but through the water ye gang the day."

Both men spoke much more strongly and shortly, but this is what they intended to say, and it was MacLure that prevailed.

Jess trailed her feet along the ground with cunning art, and held her shoulder against the stream; MacLure leant forward in his seat, a rein in each hand, and his eyes fixed on Hillocks, who was now standing up to his waist in the water, shouting directions and cheering on horse and driver.

"Haud tae the richt, Doctor; there's a hole yonder. Keep oot o't for ony sake. That's it; yir daein' fine. Steady, man, steady. Yir at the deepest; sit heavy in yir seats. Up the channel, noo, and ye'ill be oot o' the swirl. Weel dune, Jess, weel dune, auld mare! Mak straicht for me, doctor, an' a'll gie ye the road oot. Ma word, ye've dune yir best, baith o' ye, this mornin'," cried Hillocks, splashing up to the dogcart, now in the shallows.

"Sall, it wes titch an' go for a meenut in the middle; a Hielan' ford is a kittle road in the snaw time, but ye're safe noo."

Two hours later MacLure came out from Annie's room and laid hold of Tammas, a heap of speechless misery by the kitchen fire, carried him off to the barn and spread some corn on the threshing floor and thrust a flail into his hands.

"Noo we've tae begin, an' we'ill no be dune for an' oor, and ye've tae lay on withoot stoppin' till a' come for ye, an' a'll shut the door tae haud in the noise, an' keep yir dog beside ye, for there maunna be a cheep aboot the hoose for Annie's sake."

"A'll dae onything ye want me, but if—if—

"A'll come for ye, Tammas, gin there be danger; but what are ye feared for wi' the Queen's ain surgeon here?"

Fifty minutes did the flail rise and fall, save twice, when Tammas crept to the door and listened, the dog lifting his head and whining.

It seemed twelve hours instead of one when the door swung back, and MacLure filled the doorway, preceded by a great burst of light, for the sun had arisen on the snow.

His face was as tidings of great joy......'A' never saw the marrow o't, Tammas, an' a'll never see the like again; it's a' ower, man, without a hitch frae beginnin' tae end, and she's fa'in' asleep fine as ye like."

"Dis he think Annie—'ll live?"

"Of coorse he dis, and be aboot the hoose inside a month; that's the gude o' bein' a clean-bluided, weel-livin'—"

"Preserve ye man, what's wrang wi' ye? It's a mercy a' keppit ye, or we wud hev hed anither job for Sir George.

"Ye're a' richt noo; sit doon on the strae. A'll come back in a whilie, an' ye'ill see Annie, juist for a meenut, but ye mauna say a word."

When the doctor placed the precious bag beside Sir George in our solitary first next morning, he laid a cheque beside it and was about to leave.

"No, no!" said the great man. "Mrs. Macfadyen and I were on the gossip last night, and I know the whole story about you and your friend.

"You have some right to call me a coward, but I'll never let you count me a mean, miserly rascal," and the check with Drumsheugh's painful writing fell in fifty pieces on the floor.

As the train began to move, a voice from the first called so that all in the station heard:

"Give's another shake of your hand, MacLure; I'm proud to have met you; you are an honour to our profession."

"When Dr. Watson was in this country lecturing, he frequently read selections from the life of this doctor, and on almost every occasion was asked whether there was really such a man as MacLure. Of course there was! Whether in Drumtochty or not, doesn't matter, and that Dr. Watson very well knew. Wherever you go, whether in Drumtochty or in Thrums; in England or in Scotland; in Canada or in Australia, or in these United States of America; wherever the people are widely scattered and the doctors few; wherever the people are poor and a living hard to get; wherever accident and disease attend upon hardship and fatigue, there doctors of this old school are to be found, living upon little, enduring privations and danger, wearing themselves out in laborious days and sleepless nights, to serve their fellow men and women. Most of them live and die unknown and unappreciated, but appreciation is the last thing they think about; they are satisfied to have done the best they could. Dr. Watson realized the heroism and the tragedy of their self-sacrificing lives, and so wrote this beautiful story which depicts it with such pathos that few can read it with dry eyes.

"It is always spoken of as 'The Doctor of the Old School'; but there is, of course, a second doctor in it of whom scarcely anything is ever said—Sir George, one of the new school. Are we to fail in appreciation of his contribution to the happiness of the valley? Did he not return the fee for which he traveled far into the highlands in the winter, and exposed his life to danger? Was it not a sacrifice and a noble one on his part? Yes, but when he learned from Mrs. Macfadyen that Dr. MacLure was to 'pay the half' according to the agreement with Drumsheugh, what else could he do?

"And now what is it that we most admire in a doctor? I'll tell you what I think it is; it is not the doctor at all, it is the *man*. Let us consider the case of MacLure: it was not his technical knowledge that counted for so much—he was a good doctor, and we are told that he had good surgical ability—it was something very different. It was his unfailing answer to the cry for help; his willingness to suffer himself in ministering to others; his courage and fortitude in overcoming the obstacles that beset his path; his patience in dispelling ignorance and superstition; his tact in managing people that appeal to us. We see in him the real man. There is no outward show; the man himself appears. He looks like a man; he acts like a man; he suffers like a man. He is in no way better than others. He 'counts all the people of the valley his family,' and they love him accordingly. Read the story; see how he died; see who came to his funeral, and you will say, 'Behold how they loved him,' and only then will you be able to appreciate the meaning of the Scriptural epitaph chosen by Dr. Davidson, his minister, to be carved upon his tombstone, 'Greater love hath no man than this, that a man lay down his life for his friends.' "

THE MASTER POWER

"Mind is the master power
That moulds and makes;
And man is mind,
Who evermore takes
The tool of thought, and,
Shaping what he wills
Brings forth a thousand
Joys, a thousand ills;
He thinks in secret
And it comes to pass
Environment is but
His looking-glass."

—*Whittier.*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

ANNUAL REPORTS

The practical value in publishing annually reports of the activities of certain officers and committees of our Society depends largely on the reaction of our members to their study of such reports. The reports as published become, of course, a matter of record, but the influence of such reports upon the Society's future is *nil* unless our members study and constructively criticize past actions of each year's administration. With more than seven thousand members, funds totaling approximately $70,000.00, an annual gross income of approximately $50,000.00, and an annual expenditure of approximately $46,000.00, we have an organization of no mean proportion.

The degree in which we meet our larger responsibilities is partially expressed in terms of dollars and cents, as well as in the printed detail of official activities. If you are an entirely worthy member of the Society, you will study the Official Transactions published in this number, and through the chosen delegates from your county society record your approval or disapproval of the results of the year's work. You will find encouragement in the report of the Executive Secretary; breadth of vision in the report of the Committee on Society Comity and Policy; evidence of much study in the report of the Committe on Revision of the Constitution and By-Laws; and reflections of devoted service in the reports of the Councilors.

Go to Scranton, not only to enjoy Pennsylvania scenery while *en route;* not only to gain in medical lore; but to absorb some of the economics of medical society administration from county, through state, to the national organization, all of which will be well represented, including the American Medical Association in the person of Dr. Frank Billings, of Chicago, the invited guest of our own Board of Trustees.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to August 21st:

ALLEGHENY: *New Member*—David Katz, 202 Forbes Bldg., Pittsburgh. *Deaths*—Joseph L. Duncan (Univ. of Pittsburgh, '95) of Pittsburgh, July 28, aged 50; Robert J. Greer (Univ. of Pittsburgh, '94) of New Kensington, August 2, aged 53.

ARMSTRONG: *Removal*—Michael E. Farah (incorrectly listed as William H. Farah), from Yatesboro to New Kensington (Westmoreland County).

BLAIR: *Transfer*—Frank K. Miller, Altoona, from Clearfield County Society.

BUCKS: *New Member*—Joseph A. Brooke, Glenside, (Montgomery County).

BUTLER: *Death*—Robert L. Allison (Medical College of Indiana, '96) of Eau Claire, recently, aged 58.

CENTER: *Reinstated Member*—John V. Foster, State College.

CLEARFIELD: *New Member*—George B. Goheen, Coalport. *Reinstated Member*—Frank K. Miller, Altoona (transferred to Blair Couty). *Removal*—William G. Falconer, from Olanta, to 207 Cherry St., Clearfield.

CUMBERLAND: *Reinstated Member*—Harold F. Lanshe, Philadelphia.

DAUPHIN: *Removal*—Percy E. Deckard from 13 Trinity Place, Williamsport, to 632 Lewis St., Elmira, N. Y.

JEFFERSON: *Reinstated Members*—Abraham F. Balmer, Brookville; William F. Beyer, Punxsutawney; Leo J. Hayes, Force.

JUNIATA: *Reinstated Member*—Darwin M. Crawford, Mifflintown.

LEHIGH: *New Members*—Annie E. Freese, Homeopathic State Hospital; Clarence F. Ruloff, 719 N. Fifth St., Allentown.

LUZERNE: *Reinstated Member*—Leo C. Mundy, 400 Scott St., Wilkes-Barre.

LYCOMING: *Deaths*—George W. Metzger (Univ. of Pennsylvania, '66) of Hughesville, July 7, aged 81; D. M. Roudabush (Hahnemann Medical, '06) of Williamsport, July 3.

PHILADELPHIA: *Removal*—Edward A. Parker, from 1921 Chestnut St., to 2002 Spruce St.; John M. Fisher, to 345 S. Nineteenth St., Philadelphia.

SNYDER: *Reinstated Member*—Elmer R. Decker, Edward W. Toole, Selinsgrove.

SOMERSET: *Reinstated Member*—George A. Noon, Listie.

WAYNE: *New Member*—Hugh Stevenson, III, Waymart.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since July 22d. Figures in first column indicate county society numbers; second column, State Society numbers:

July 22	Snyder	10	7187	$5.00
	Somerset	45	7188	5.00
24	Center	28	7189	5.00
	Jefferson	51-53	7190-7192	15.00
25	Westmoreland	151	7193	5.00
26	Snyder	11	7194	5.00
	Wayne	27	7195	2.50
28	Clearfield	66	7196	5.00
Aug. 7	Cumberland	41	7197	5.00
	Allegheny	1195	7198	2.50
12	Juniata	12	7199	5.00
15	Bucks	78	7200	2.50
17	Lehigh	106-107	7201-7202	10.00
21	Clearfield	67	7203	2.50
	Luzerne	226	7204	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 North Third Street
Harrisburg, Pa.

THE COMMERCIAL AND EDUCATIONAL EXHIBIT

72D ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, SCRANTON, OCTOBER 2-5, 1922

The following account of the Scranton exhibit is submitted for the convenience of those attending the Session. We would urge all not to miss this exhibit, as it will be well worth while:

The Abbott Laboratories of Chicago, in booth 71, will present to the medical profession of Pennsylvania American-made medicinal chemicals, a few of which are as follows: Butyn, the new local anesthetic; Acriflavine, Cinchophen, Neocinchophen, Argyn, Barbital (introduced as Veronal), Digipoten, and other Council-passed products.

At booths 21 and 22, A. S. Aloe Company of St. Louis will have on exhibit their two leading specialties: the Lightning Electro-Therapeutic Cabinet and Spencer 18-H Special Microscope, as well as a complete line of apparatus and instruments of interest to every physician. By means of their "Rental Purchase Plan," terms extending from 8 to 12 months are made by this firm on all items of their extensive line.

The P. Astier Laboratories, Paris, France, will occupy space 67 and will exhibit their Arheol, a pure oil of santal preparation, and Riodine, an iodized compound of ricinoleic acid, which in suitable cases has the advantage of practical freedom from iodism and a slow and even absorption and elimination of the iodine. Mr. Albert Thouin, with assistants, will receive visitors and supply samples and literature. [See advertisement, page xii, this Journal.]

The Battle Creek Food Company of Battle Creek, Michigan, the pioneers in the breakfast food industry, will make an exhibit at booth 9 of a number of their many foods which every up-to-date physician must appreciate, as they are of a highly practical value which has been thoroughly tested in daily use by the Battle Creek Sanitarium, for which institution these foods were originally made. Among the various foods, we may mention as of special interest a line of superior glutens for diabetics, a palatable Soy Bean Biscuit free from carbohydrates, foods extraordinarily rich in food iron and food lime for anemic patients, foods for changing the intestinal flora and a number of foods and food accessories of special value to patients suffering from constipation.

W. A. Baum Company, Inc., New York, in booth No. 61, will present to the attending physicians the latest facts derived from experience in the use of the blood pressure apparatus. Blood pressure readings are now an every-day procedure, and many times physicians are unable to reconcile the inconsistencies of such readings with the patient's other symptoms. A booklet on the subject, prepared by the American Institute of Medicine, will be distributed and an interesting demonstration of blood pressure apparatus will be given.

B. B. Culture Laboratory, Inc., Yonkers, N. Y., will occupy space 36. Notable advances are being made, both as to means and methods in the field of lactic cultures. This laboratory, as a specialist in this work, has kept fully abreast of the times. At the Scranton meeting new uses of B. B. Culture will be suggested for your consideration and new forms of cultures will be shown—in short, the latest in lactic cultures. The pediatrician and general practitioner will find this exhibit of unusual interest. [See advertisement, page xvi, this Journal.]

In spaces 47 and 48, Becton, Dickinson & Co., Rutherford, N. J., will exhibit Genuine Luer Syringes, Yale Quality needles, Ace Bandages, Asepto Syringes, the Fleischer Spinal Manometer, the Brown Sphygmomanometer, and physicians' bags. Within the last year quite a few needles to simplify intravenous work, spinal work and intramuscular work have been devised. Amongst them are the Hoyt Spinal Needle, Petroff Blood-letting Needle, B-D Observation Needle and Luer Precision Adapter. In the Asepto line, the Mason syringe for nasal and ear work, Goldstein syringes for eye work and the Asepto Breast Pump have been added. The newest products of B-D, the "B-D Manometer Universal Type" and the Fleischer Stethoscope will also be shown.

At booth No. 2, the Bethlehem Laboratories, Inc., Pittsburgh, will exhibit Hyclorite. This product is rapidly becoming the surgical solution of choice in the large clinics and hospitals of the country in combating surgical infectious pathology. It is a stabilized concentrate—scientifically built, non-irritating and non-poisonous—and has a wide range of application in general surgery. This solution makes a "pus free" case possible. It is a remarkable germicide and deodorant, and has been accepted by the Council on Pharmacy of the American Medical Association.

The Frank S. Betz Company will be represented by Mr. M. M. Werner, of their New York store, and will occupy spaces 72 and 73. Several types of new instruments and surgical appliances will be shown. [See advertisements, pages xv and xvii, this Journal.]

George W. Brady and Co., Chicago, in booth 18, will present their x-ray specialties and supplies. Their new model Potter Bucky Diaphragm, with electric signal attachment, one of the new accessories in x-ray work, will be demonstrated. Also an exhibition will be given of a novel portable bedside x-ray apparatus, that can be attached to any electric light socket. [See advertisement, page xv, this Journal.]

The M. H. Bresette X-ray & Radio Company, Philadelphia, will exhibit, in booths 69 and 70, the x-ray products of the International X-ray Corporation of New York, and the electrotherapeutic products of the McIntosh Electrical Corporation of Chicago. This exhibit will be of peculiar interest to the medical profession, inasmuch as it will afford them the opportunity of seeing the new "Precision" type of x-ray machine which is being so extensively discussed among the engineers and physicists of this country as well as Europe.

D. V. Brown, Importing and Manufacturing Optician for the Profession, Philadelphia, will exhibit in space 32 a full line of the latest patterns of office equipment and other specialties and appliances devoted to the use of oculists in the fitting of glasses. [See advertisement, page xi, this Journal.]

Cameron's Surgical Specialty Company, Chicago, will occupy booth 49, and will exhibit electro-diagnostic and surgical specialties. A number of new and improved instruments developed during the past year will be demonstrated. Among the specialties to be shown are Cameron's Electro-Cautery for major surgery, Cameron's Surgiroll, Cameron's Surgilities, and Cameron's improved Electro-Diagnostoset.

The Child Health Organization of America (New York) will be represented by an exhibit showing a map of Healthland. Changing lights play over the surface and draw attention to the stately skyscrapers of Milky-Way and the verdant meadows of Spinach Green. Long-Sleep Mountain calls the child to an early bed. A member of the staff will be present to explain the work of the organization, and its effort to interpret science to the child and to the teacher.

The Climax Dental Supply Company, Scranton, in space 41, will exhibit surgical instruments and supplies. This well-known firm has, for a long time, handled dental supplies and instruments and is now entering the field of caring for the surgeon's wants. Their display of instruments and apparatus will be well worth seeing.

Colgate and Company of New York City will occupy booth 23, where they will exhibit their well-known line of toilet articles—soaps, perfumes, talcum, shaving cream, tooth paste, etc. They are always generous with their samples. Be sure to call.

The Dry Milk Company, New York, manufacturers of Dryco, a special dry milk for babies, and also, Protolac, a calcium-caseinate for making protein milk, will show these products at their booth (No. 25). We expect this booth will be a popular one, as there is much interest evidenced in these products. Doctors are very much interested, also, in getting one of the famous Dryco Everpointed Pencils.

You will be more than welcome to stop in at booths No. 53 and 54 of the **Engeln Electric Company**. The DupleXray with the K-K motor-drive table will be there, together with other new apparatus. Be sure to see the DupleXray as it is an exception.

The Gilliland Laboratories, Ambler and Marietta, will exhibit at booth 62 a complete line of biological products including Diphtheria Antitoxin, Tetanus Antitoxin, Smallpox Vaccine, Antipneumococcic Serum, Antimeningococcic Serum, Rabies Vaccine, Tuberculins and the commonly used Bacterial Vaccines. All of the products manufactured and exhibited by The Gilliland Laboratories are approved by the Council on Pharmacy and Chemistry of the American Medical Association. These Laboratories have supplied the Pennsylvania State Department of Health with Antitoxins and Vaccines for a number of years.

C. O. Hasselbarth, Albany, N. Y., has reserved booth 77, where Dr. Gorham will himself give a demonstration of the Gorham Adjustable Bed—a bed which preserves an unbroken bed line, yet gives practically a sitting position for eating and evacuations; also allows the patient to lie on a steep incline for the Fowler position without sliding down in the bed. A single nurse may elevate the heaviest paralyzed patient above the mattress for changing the bedding. The bed is a boon to the recumbent ill, and a practical aid to the surgeon.

The High Tension Transformer and Equipment Corporation, Hoboken, N. J., will demonstrate "The Intermediate X-Ray Unit" at booth 26. This machine utilizes a new system of rectification through which it has become possible to build this mobile unit with sufficient capacity for applying all the usual x-ray therapy at the bedside and also for doing all radiographic and fluoroscopic work. The perfection of this machine is recognized as an important achievement in the progressive development of x-ray apparatus. The new High Tension High Frequency machines will also be demonstrated. These are noted for the exceptionally soft quality and great volume of current with delicate control through the Multiple Spark Gap. The newly developed Electro-Scalpel will be displayed here. This instrument makes a clean incision, not by pressure as with the ordinary scalpel, but by means of a delicately attuned oscillatory current which divides the tissues ahead of the progress of the blade. The type of current used is new to electrosurgical instruments. The Electro-Scalpel is worthy of careful investigation.

The Horlick's Malted Milk Company, Racine, Wisconsin, invite the attention of all to their space No. 65, where the well-known pioneer products, "Horlick's," the Original Malted Milk, in powder and tablet forms, and Horlick's Food will be interestingly presented. The value of "Horlick's" as an x-ray suspension vehicle will be a feature, and the use of the "Horlick's" products in special conditions, and for the infant and invalid in general, will be taken up by the representative in charge. New printed matter and samples will be supplied, and your inquiries and discussions are invited. [See advertisement, page xvii, this issue.]

Wm. H. Horn and Brother, Inc., of Philadelphia, will occupy space No. 29, where they will demonstrate the Curtis Support, to be used in cases of enteroptosis, gastroptosis and visceroptosis. Their display will also include trusses, abdominal belts, elastic stockings, arch supports, etc. Their Hornbo seamless surgical elastic hosiery is constructed of a soft, but strong, pliable fabric of light weight and durable. This exhibit should be visited by every member of the profession present at the Session, as the frequent need of this firm's goods is apparent. [See advertisement, page xx, this Journal.]

In booth No. 37, **Hynson, Westcott & Dunning**, of Baltimore, will exhibit their standard pharmaceutical specialties. Their ovarian glandular, thyroid and benzyl antispasmodic preparations, Mercurochrome-220 Soluble, and Bulgara are of particular interest. [See advertisement, page xvi, this issue.]

At booth 27, **The Kalak Water Company**, New York, will again be present with an exhibit of Kalak Water, the strongest alkaline water of commerce (nonlaxative). Physicians are invited to call at their booth and partake freely of Kalak. Ask to see a demonstration of Kalak Urinalysis Indicators for determining the depletion of the alkaline reserve.

Keasbey & Mattison Company, Ambler, Pa., will occupy booth 50. This firm manufactures granular effervescent preparations which have become very popular since their introduction into medicine about 1884. They are also the manufacturers of Carbonate of Magnesia U. S. P., Light and Heavy Calcined Magnesia. This firm is one of the oldest in the list of manufacturers of chemicals.

The Keystone Surgical Instrument Co. of Philadelphia, will occupy space No. 31. This well-known firm will present to the profession a display of surgical instruments and furniture for physicians' offices and hospitals, which will be of interest to all. They are the exclusive manufacturers and distributors of Ferguson's Eye, Ear, Nose and Throat Instruments, which should interest the members of the Specialties Section especially. Their exhibit of electric diagnostic instruments and apparatus for the hard of hearing makes a very complete and interesting exhibit.

The Kolynos Company, New Haven, Conn., will occupy booth 24, and will present each visiting physician with a large-sized tube of Kolynos Dental Cream. Every physician should know the formula of the dentifrice he recommends.

KOLYNOS DENTAL CREAM

Calcii Carbonatis	21.00%
Saponis	25.50%
Thymolis	.25%
Acidi Benzoici	.30%
Sodii Benzosulphinidi	.50%
Olei Eucalypti	1.75%
Olei Menthæ Piperitæ	1.90%
Glycerini	27.00%
Alcohol	21.80%
	100.00%

The Kronenberg X-Ray & Supply Company of Baltimore and Pittsburgh will exhibit and demonstrate in space No. 28 the Alpine Sun and Kromayer Lamps, which are of great interest to modern therapeutists. A full line of x-ray supplies will also be displayed, with special demonstrations of Kronol Prepared Developer and London Intensifying Screens.

Lewis and Reilly, Scranton, will occupy booth No. 5. This well-known firm of shoe dealers have for their motto "Always Busy," and are the leading dispensers of high-grade footwear for Northeastern Pennsylvania. They specialize in fitting feet with properly made and comfortable footwear. Their display of Cantilever shoes as well as their other shoes of popular make should interest every physician in attendance.

The Liebel-Flarsheim Company of Cincinnati, Ohio, will occupy spaces 57-58-59, where they will feature their Model F Dynelectron. This appliance has been perfected after three years of intensive research and experimentation, and was made necessary by postwar demands. Their representatives will be on hand to give a complete demonstration of this as well as of other electric apparatus which they will exhibit.

J. B. Lippincott Company's exhibit (space 66), which will be in charge of their Medical Director, Mr. William Widmer, and his assistants, will be of particular interest in view of a number of important new books which are well worth examination, especially: Mason's Endocrines, which presents in clear and sober manner our present-day knowledge of the subject; Feer's Famous Book on Pediatrics, which is one of the most celebrated European works on the subject, revised, edited and Americanized by about a dozen western and southern American teachers; Cumstom-Patry's Surgical Treatment of the Nonmalignant Affections of the Stomach; Wilson-Bradbury's Internal Medicine, a practice of medicine by practitioners for practitioners arranged for quick reference; Fuchs' Ophthalmology, New Seventh Edition; and the deservedly popular Rehberger's Quick Reference Book on Medicine and Surgery, which gives all the facts and all in one place. Along with these outstanding works, they will also show their standard line of medical, surgical and nursing handbooks, including such great works as Piersol's Human Anatomy, with the remarkable anatomical charts.

The Maltbie Chemical Company, Newark, N. J., well-known to the physicians of Pennsylvania, will occupy space No. 12. Calcreose will be the feature of their exhibit. Mr. Somerville, sales manager, will be in charge. Mr. Smith, Mr. Hall, Dr. Allen, and Mr. Faulhaber will probably also be present, and Mr. Maltbie will attend, if possible. These men will be pleased to meet and greet their many friends among the physicians of the great State of Pennsylvania. [See advertisement, page x, this Journal.]

McIntire, Magee & Brown Co., Philadelphia, in space 58, will present a display of ophthalmic office equipment, also a large assortment of the latest textbooks and charts used in the field of ophthalmology. This firm are wholesale prescription opticians and should attract to their booth every eye specialist attending the sessions, as well as physicians who are interested in examining and treating the human eye.

The McKennan Pharmacy, of Pittsburgh, is a strictly ethical pharmacy devoting its energies exclusively to the service of physicians and their patients. Its exhibit, each year, is for the purpose of directing the attention of the medical profession of Pennsylvania to its individuality among pharmacies, its ethical practice, and its ambition for the elevation of pharmacy as a profession. Be sure to call at booths 19 and 20. [See advertisement on back cover, this Journal.]

Mead Johnson & Company, Evansville, Indiana, will exhibit their well-known ethical line of Infant Diet Materials, which are suitable for modifying cows' milk. This firm realizes that all babies cannot be fed alike and that best results in feeding infants are obtained when the various changes in the formula are regulated by the doctor; therefore, Mead Johnson & Company do not supply feeding directions on their packages, or advertise to the laity. Their well-known products—Mead's Dextrimaltose and Mead's Casec—will be exhibited at booths 12 and 14. [See advertisement, page vii, this Journal.]

In booth No. 7 you will find E. H. Heacock, E. T. Keech and H. C. Fulton representing The Medical Protective Company, of Fort Wayne, Ind., who will explain their form of policy, manner of conducting business and other details concerning the medical defense of physicians who have unfortunately been sued for alleged malpractice. This firm works entirely in accord with the Medical Defense Fund of the State Society, and it is recommended that for added protection the policies written by this company are of an advantage. See their representatives and obtain literature for future study. [See advertisement, page ii, this Journal.]

Booth 35 will be occupied by the Mellin's Food Company, Boston, Mass. No argument is needed to emphasize the advantage to the physician of a thorough knowledge of any product that he deems worthy of frequent or only occasional use in the work of his profession, and representatives of this Company will make a special effort to bring out clearly everything that has a bearing upon the source, nature and amount of the nutritive elements present in Mellin's Food, in order that physicians who are not perfectly familiar with it may have an opportunity to acquire the information. [See advertisement, page xi, this issue.]

Salvarsan, Neosalvarsan and Novocain, all significant names in the minds of physicians, are leaders in the exhibit of the H. A. METZ LABORATORIES, INC., New York, at booth 3. Salvarsan and Neosalvarsan are the prototypes of the original arsenicals. Novocain has for many years been *the* local anesthetic of choice both for minor and major surgery. Among others of the standard products on exhibition will be Collapsules of Bichloridol and Salicidol, synergists to the arsenicals; Pyramidon, analgesic and antipyretic; Parathesin and Orthoform, local anesthetics; Albargin, antigonorrheic, and several other medicinal agents which carry distinct appeal to the physician.

E. B. MEYROWITZ, INC., New York, will show at booths 75 and 76 a Combination Mouth Gag and Tongue Depressor, entirely adjustable and automatic, a great advantage to those who operate unassisted. They will also exhibit suction apparatus for aspiration of sinuses, illuminating apparatus, a portable, nonrevolvable perimeter, together with many specialties for eye, ear, nose and throat work.

THE NATIONAL DRUG COMPANY, of Philadelphia, in its exhibit at booth 46 will display a few of its Tablets, Elixirs, Fluid Extracts, Tinctures and some of its Special Preparations. No concern exercises greater care in the selection of crude drugs and in the manufacture of its finished products than the National Drug Company, and they invite your inspection during the meeting of the Society. [See advertisement, page xvi, this JOURNAL.]

Booth 33 will be occupied by THE PEPSODENT COMPANY of Chicago. One of their representatives will be in charge of the exhibit and will explain any points regarding the ingredients or effects of this scientific dentifrice. Surely you are interested in Pepsodent, as no doubt many of your patients right in your own community are regular users of it. He will gladly discuss Pepsodent with you and will give you samples so that you and your family can test its advantages at home.

THE PHYSICIANS' SUPPLY CO. of Philadelphia will exhibit their usual high grade line of Surgical Instruments at spaces 63 and 64. Particular attention is given to the specialists' instruments for Eye, Ear, Nose and Throat, and Uriological work. All members of the Society will be welcomed to their exhibit.

THE HARVEY R. PIERCE COMPANY, Philadelphia, will exhibit at booth No. 1, a full line of surgical instruments, Pierce-Alloy splints, special bone instruments, etc. You will be welcomed at their exhibit.

The exhibit of the RADIUM CHEMICAL COMPANY, of Pittsburgh, at booth 34, will include many new instruments for the handling of radium and new applicators for applying radium will be demonstrated. Mention is also made of the course of lectures on the Physics and Therapeutics of Radium, given monthly in Pittsburgh under the direction of Drs. Viol and Cameron. There is no fee connected with these lectures.

The exhibit at booth 45 will consist primarily of a display of a very complete assortment of the instruments and applicators which have been developed by the Mechanical Department of the RADIUM COMPANY of Colorado (Denver, New York, etc.), in conjunction with some of the leading physicians and surgeons practicing radium therapy in the United States. There will also be copies of current and back numbers of *The Radium Therapist,* their monthly journal, giving reprints of important articles dealing with the technique and dosage of radium in the treatment of the more common, malignant and nonmalignant conditions. In addition, there will be a supply of their catalogs and other literature. [See advertisement, page vii, this JOURNAL.]

THE SANBORN COMPANY of Boston (booth 30) will demonstrate their diagnostic apparatus, including: (1) The Sanborn Benedict Metabolism Apparatus — a standard type for hospitals, clinics, etc.—also the new Kymograf for attachment to this apparatus in order to record respiration drawings during tests; (2) Sanborn Handy Metabolism Apparatus, a portable type for the general practitioner; (3) Sanborn Pulse Wave Recorder, a new and simplified Polygraf; (4) Sanborn Blood Pressure Outfit; (5) Sanborn Vital Capacity Spirometer, for lung capacity tests.

W. B. SAUNDERS & COMPANY, of Philadelphia and London, will occupy booth 52. This publishing house will have a full line of medical books. Among them will be many new books and new editions, such as: Stevens' Practice of Medicine; Lewellys F. Barker's Clinical Medicine; the new Mayo Clinic Volume, Crile's The Thyroid Gland; Stookey's Surgery of the Peripheral Nerve; Pirquet's System of Nutrition; advance sheets of Abt's System of Pediatrics; Einhorn's Dietetics; Chevalier Jackson's work on Bronchoscopy and Esophagoscopy; advance sheets of Gant's work on the Rectum, Anus, Colon, Sigmoid Flexure, and Iliocolic Angle; Griffith's Pediatrics; Hill's Infant Feeding; and many other important works. [See advertisement, front cover, this JOURNAL.]

THE BACTERIOLOGICAL LABORATORIES OF G. H. SHERMAN, M.D., Detroit, Mich., will occupy space 56. It is well known that Dr. Sherman is one of the pioneers in questions relating to vaccine therapy. His staff has done much research work in a large variety of diseases and has done much to clarify the obscure problems pertaining to this method of therapy. Dr. Sherman is laying particular stress upon the use of vaccines in the treatment of acute infections where they usually have been considered to be inapplicable. The dosage which he recommends is also unusual, in that the vaccines are recommended to be given at intervals of 6 or 12 hours. Dr. C. F. Kirkendall, who has been with the Sherman Laboratories for a considerable number of years and who is well known throughout the State of Pennsylvania, will have charge of the exhibit and will be pleased to furnish information in regard to the same and the research work being conducted on this subject. Physicians interested in immunology and vaccine therapy will surely find it profitable to spend some time at the Sherman booth at the coming meeting.

A most interesting exhibit will be that of the SMITH & CLARK COMPANY, of Wilkes-Barre and Scranton, Pa., New York State and New Jersey. The Healthized process of freezing Ice Cream in an atmosphere one hundred times purer than ordinary air is of special interest to physicians. In addition to immense ice cream producing plants at Wilkes-Barre, Pa., Middletown, N. Y., and other cities, the Smith & Clark Company recently opened a Half Million Dollar Plant at

Scranton, which is said to be one of the largest and most modern in the world. Doubtless their booths, Nos. 6 and 60, will be centers of attraction.

The Squibb exhibit, at spaces 38-39, will be an educational one of more than usual interest, showing many of the newer products of the Squibb Laboratories. An effort will be made to show in a graphic way, the production of such preparations as the Allergens, Thyroxin and Solution of Arsphenamine, all occupying positions of unusual interest to the physician. Squibb's Chloroform will also be shown in its new container, the dropper bottle and vacuum ampul, both especially interesting at the present time on account of the recent difficulty experienced by the Army in the deterioration of its surplus stocks of this product. The Squibb Laboratories have been favorably known by our older members for over half a century. Squibb's Ether and Chloroform, Squibb's Ergot and many other products have been standards with us for so long, that the Squibb exhibit will be like the renewal of acquaintance with an old friend.

The Sweetbriar Laboratories, Inc., of Pittsburgh, manufacturers of the well-known Sweetbriar Grainless Screens, are just putting on the market a new screen which embodies some very great improvements over the old Sweetbriar Screen. Their exhibit will consist of the new Sweetbriar Screens, in both the washable and the waterproof style, and films showing the quality of the pictures produced by these screens. They will be found at booth 9.

The Thompson-Plaster X-Ray Co., of Leesburg, Va., will exhibit in space 10 a full line of their X-ray and Electro-Therapeutic apparatus, including a new attachment to their Oil F outfit specially adapted to electro-coagulation in desiccation work. Call at their booth and see their new edition of Electro-Therapy in the Abstract—a very valuable book on treatment work.

Visitors to the exhibit of the Victor X-Ray Corporation at spaces 42-43, are assured of obtaining information, both interesting and educational, in connection with the latest developments in X-ray Apparatus, High Frequency and Sinusoidal Therapy and Ultra-Violet Therapy. The increasing interest in Ultra-Violet Therapy, as evidenced by the frequent articles appearing in current medical journals, should prompt every physician to look over the Victor line of Quartz Lamps. The subject of Diathermy and Electro-coagulation with the High Frequency current is also attracting a great deal of attention in medical centers just now. Come in and see the specialized Victor High Frequency apparatus for this purpose. One of the most important x-ray developments since the advent of the Coolidge Tube itself is the Victor-Kearsley Stabilizer; the function of which is to hold constant the milliamperage of the Coolidge Tube, regardless of any fluctuations of the line voltage that may take place during the exposure. Fluctuating line voltage has long been an annoying factor to radiologists, so this remarkable device, which makes possible 100% radiographic results, is indeed of immediate interest to every physician using the x-ray.

The Wappler Electric Company, Inc., of Long Island City, N. Y., will exhibit, at spaces 15 and 16, their Composite X-Ray Unit, consisting of a Horizontal and Vertical Radiographic and Fluoroscopic Table, together with their latest type patented automatic Stereoscopic Plate Changer. The outfit is a complete x-ray plant in itself, suitable for the work demanded by a general practitioner and small hospitals. They will also exhibit a few models of their High Frequency apparatus, along with the latest type Cystoscopes, etc. The exhibit will be in charge of their Pennsylvania Sales and Service Agents, the Weber Electric Company, Philadelphia, and the Kronenberg X-Ray & Supply Company, Pittsburgh.

The Welch Grape Juice Company, Westfield, N. Y., will be located at booth No. 11 and will again dispense free drinks of Welch's "The National Drink," to all comers. There will also be on view copies of their new booklet, "Grape Juice As a Therapeutic Agent," which will be sent free to all members of the Society who sign the requisition.

The features of the exhibit of the Wilmot Castle Company, of Rochester, N. Y., will be a new sterilizer in which the automatic cut-off operates before the water is all gone. The bottom of it is so arranged that when one portion is exposed the heat is automatically turned off, leaving a goodly quantity of water in the other part of the bottom. This never-boil-dry feature of the new Castle sterilizer automatically protects both instruments and sterilizer against the danger of overheating. The sterilizer itself cannot boil dry and there is always water and steam present for the protection of the instruments. They will be found at booth 51.

The Woodlawn Farm Dairy Company of Scranton, dispensers of high-grade pasteurized milk in northeastern Pennsylvania, will occupy space 17. They will demonstrate the food value of milk and how best to protect it for infant and invalid feeding. The subject of the milk supply of every large center of population is demanding more and more careful, scientific attention, and the work of this firm should attract the physicians to inspect what can be done in this direction.

It is to be regretted that some of the exhibitors who will occupy spaces in the commercial and educational exhibit at Scranton have not forwarded material for their write-up in this department. The few that are now lacking will be found in the official program, which members will receive at the Session.

Just a word about this exhibit: We do not doubt that but few of the members of our Society realize what the commercial and educational exhibit means to them. Without this exhibit the entire cost of the Session would be raised by assessment on each member of the Society, in order that the annual session might be supported. Now that we have a well patronized exhibit it should be not only the pleasure but the duty of every member, as well as of visiting physicians and those accompanying them, to call at each booth during the session and manifest to the representatives of the firms exhibiting an interest which many times heretofore has been lacking.

The exhibit is indeed an educational feature, and will enable you to keep in touch with the latest developments, not only in medical supplies, but also with the latest developments in medical science. Be sure to pay it a visit. Frederick L. Van Sickle,

Manager of Sessions and Exhibits.

SCRANTON HOTELS

You will find the list of hotels in the July (page 721) and August (page 810) Journals.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan. M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman. M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunhury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washhurn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

September, 1922

COUNTY SOCIETY REPORTS

BERKS—JULY

The Berks County Medical Society met at Wernersville, July 11th, at which meeting we were addressed by John A. W. Haas, President of Muhlenberg College. Dr. Haas said in part:

It is evident that this meeting has as its aim a message from educators to the doctors. We, who are interested in the colleges, have just two matters that strongly interest us: First, we want to appeal to the medical practitioners to throw their whole influence in the direction of the proper care of the health of the growing youth. Many come to our colleges who are not in the best physical condition. The medical care in some of the secondary schools is still defective. The medical profession should seek to obtain power to remedy this condition and to raise the physical standard of youth.

The army tests have shown that there is a low average of mentality in America. About one-half of the people, according to the estimate derived from the examination of 1,700,000 men, have the mental qualifications of children of 12 years. This mental condition is partly due to ancestry and also partly due to poor physical conditions. We need the best study of the medical profession to help us in remedying this evil.

Second, we want you to know how we are striving in the colleges to give a new impetus, both in class work and through physical training, to the raising of the physical and mental standards of the American people. At Muhlenberg we have large classes of public school teachers whom we are instructing in these problems of making a better democracy on the foundation of better health conditions and the observance of health laws.

C. S. Keiser, *Reporter*.

LYCOMING—JULY

At the July meeting of the Medical Society of Lycoming County Dr. J. Gibson Logue read a paper on "Treatment of Convulsions in Children." The following salient points were brought out: During the very early days of life a convulsion indicates cortical irritation which is either direct or indirect and should always be considered serious. Direct causes are: (1) injury to brain structures at birth; (2) irritation from meningitis, tumor or hydrocephalus; (3) trauma in later life. The common indirect causes are: (1) rachitis; (2) gastrointestinal disorders; (3) enlarged thymus gland; (4) toxemias; (5) dentition; (6) phimosis; (7) asphyxia; (8) repetition—with each convulsion the inhibitory control is lessened and each succeeding seizure requires less cortical irritation; (9) spasmophilia.

In the treatment of convulsions in children keep in mind that you are dealing only with a symptom. Determine the cause. Take the rectal temperature. Ascertain the history of the case as to previous convulsions, exposure to contagious diseases and errors of diet. Examine the urine. For the convulsions give chloroform or ether, morphine or chloral hydrate. Wash out the lower bowl and give a cathartic—preferably castor oil. Do not wash out the stomach. A hot mustard foot bath may be given, or alternate hot and cold baths, although cold is best if the temperature is high. Bromides and chloral are advisable if the patient does not relax after the convulsion and can be administered by mouth or rectum. Chloral should be given in small doses. A soft rubber catheter, introduced high, is the best method of rectal administration. Quiet and rest, and a low caloric diet should follow the treatment of acute condition.

Spasmophilia: It is undoubtedly true that large proportion of the convulsions seen in infancy actually rest upon a spasmophilic basis. It is a common chronic disorder of metabolism, seen usually in bottle-fed infants over three months of age, and is manifested by increased irritability of the central nervous system, which shows itself by spasm of the larynx, tetany or general convulsions. The seasonal incidence of spasmophilia is very striking, being most common in winter and spring and rare in summer.

Dr. R. K. Rewalt discussed the subject of "Treatment of Summer Diarrhea in Children." Dr. Rewalt first of all emphasized prophylaxis of the causes of diarrhea. Persistent and repeated instruction must be given to mothers. The milk supply is most important and certified milk should be used, if available. Castor oil is the best laxative. No food, but plenty of water should be given for 24 hours. The drugs that can be used are bismuth, bicarbonate of soda, and opium.

Diarrheas of toxic origin, like cholera infantum and enterocolitis require stimulation, purgation and especially some form of opium with atropine. Water should be given only intraperitoneally. Milder types can be allowed to drink plenty of water, and can be given some nourishment, as cereal water, albumin, with stimulation. Colonic flushings should be done only twice a day. Large doses of bismuth with soda can be used, separately by preference. Acidity of the stools should be tested with litmus paper, and if neutral the soda should be withdrawn. Opium should be used according to the symptoms and conditions. The return to food can best be accomplished by using protein milk, gradually going back to milk and the regular diet. In acute intestinal indigestion severe conditions can follow, but proper treatment should correct the condition in 3 to 5 days. If the diarrhea is persistent after the temperature is reduced, bismuth should be used. In acute ileocolitis all milk should be stopped, using plenty of water and cereal water. Broth may be used if it does not increase the number of stools, and orange juice and tomato juice can be administered.

Those participating in the discussion of these subjects were: Drs. G. R. Drick, Ella N. Ritter, L. M. Hoffman, O. R. Etter, Chas. Cummings, C. D. Vorhees, Ralph Steans, W. F. Kunkle, W. E. Turner, W. E. Delany, Ed. Lyon, L. E. Langley and J. L. Mansuy.

Dr. T. Kenneth Wood reported several cases of ivy and sumac poisoning treated by an antigen. Dr. J. L. Derr recommended a solution of hyposulphite of soda, 10 per cent.

Dr. J. G. Logue reported a case of infantile syphilis, treated by injecting neosalvarsan, one-tenth gram, in the anterior fontanelle once a week.

W. F. Kunkle, M.D., Reporter.

MONTGOMERY—JUNE

The regular meeting of the society was held at the Montgomery Hospital, Norristown, June 7, 1922, with Dr. George Miller in the chair. The following members were present: Drs. George W. Miller, Irwin, Wolfe, Atkinson, Elmer, Yeakle, Sherborn, Wm. G. Miller, Bostock, Hunsberger, Hubley, Garner, P. Lukens, McCracken, McLaughlin, Eisenberg, Little, Fabbri, Buyers and Simpson. Dr. Wm. G. Miller announced that the Board of Directors of the Hospital wish to set aside a room for the Medical Society in the nurses' home annex now being built, and asked that the Medical Society furnish it for their own use. Upon motion the Board of directors were authorized to furnish the room when completed.

Drs. Hunsberger and Buyers gave a report of the May meeting of the A. M. A. in St. Louis, which they had attended.

Dr. O. H. Perry Pepper, of Philadelphia, gave an excellent talk on "Acidosis," which was discussed by Drs. Elmer, Hunsberger, Bostock, George W. Miller and Buyers.

The secretary announced the serious illness of Dr. O. C. Heffner of Pottstown. Upon motion the secretary was instructed to extend to him the sympathy of the society. John C. Simpson, M.D., Reporter.

MONTOUR—MAY

The regular monthly meeting of the society was held at the State Hospital for the Insane, Danville, on Friday, May 19th, and was called to order by the president, Dr. H. V. Pike, at 2:30 p. m.

The following members were present: Drs. Ida Ashenhurst, L. R. Chamberlain, G. B. M. Free, Frank D. Glenn, J. Allen Jackson, H. V. Pike, E. B. Shellenberger, E. H. Adams, C. E. Ervin, H. L. Foss, Reid Nebinger, P. C. Newbaker, R. S. Patten, J. H. Sandel and E. T. Williams. Local visitors were: Drs. A. R. Kirch, G. W. Brose, W. R. Paules and A. B. Vastine, D.D.S. The out-of-town visitors were: Drs. J. W. Shoemaker, Lock Haven; L. M. Knauber, R. J. Bower, Gibson Logue and L. M. Raemore, Williamsport; Ralph Steans, Lewisburg; Chas. Brosius, Shamokin Dam; H. I. Simmonds, C. H. Weimer, M. J. Flanagan and L. M. Holt, Shamokin; C. C. Conner, Kulpmont; J. W. Bruner, J. S. John, H. Bierman, J. R. Montgomery, Sr., C. Z. Robbins and C. B. Yost, Bloomsburg; F. R. Clark, W. C. Hensyl, H. S. Buckingham and H. V. Hower, Berwick, and W. F. Harrison, Plains.

Owing to several days of inclement weather, which made motoring rather uncertain, the attendance of visitors from the surrounding counties was not as large as had been hoped for.

The reading of the minutes and other general business was dispensed with and the scientific program was at once entered into. The president warmly welcomed the visiting physicians, and in well-chosen words introduced the speaker for the occasion, Dr. D. J. McCarthy, a noted neurologist of Philadelphia, who conducted a most interesting and helpful clinic, in which he presented a variety of neurological cases. He presented three groups: First, those in which there is a distinct pyschosis; second, those of the abio-atrophic group; and third, those resulting from specific infection.

For the first group he presented a case of dementia præcox, which belongs to the adolescent group. He regarded the case presented as one of tuberculous origin. He said the affection may show itself as early as the third year. As time goes on the blood pressure drops and the brain thus becomes poorly nourished. The patient may be a student or an engineer. As an early symptom it is noted that he cannot keep his mind upon his work; he wanders. Later he becomes flat-chested, and perhaps flat-footed. He may also have pyorrhea alveolaris, or some other infection.

Such cases are depressed and moody, and 50 per cent. show heredity as an etiological factor. If such a case is diagnosed early, and treated as an incipient tuberculosis, there is hope for a complete recovery. The treatment consists of having the patient live out-of-doors, living and sleeping in the open. Put him on a farm and feed him well; give him the advantage of physical training; straighten him up and have him take deep-breathing exercises; clean up his teeth and rid him of any toxemia that may be present. If such a case is neglected for two or more years it is apt to become hopeless. This is an important form of psychosis, since such patients usually live for quite a period of time and thus become a heavy burden upon the community or state.

For the second, or abio-atrophic group, six cases were presented, which illustrated the different phases of the disorder. In many of these cases we have a wasting of some of the centers near the surface of the brain, giving us mental defects, dementia. In others, there is wasting or atrophy of the posterior lateral tracts of the cord. Here we have interference with locomotion, choreic movements, tremors and palsies. This condition may follow some other disease, as rheumatism, influenza, or typhoid. It is often hereditary, and several members of the same family may be afflicted. Such should not be allowed to marry, since mental defects are likely to result in the offspring. Most of these defectives show themselves in early life and little can be done for their relief.

In the third, or specific, group we have a specific infection as the exciting cause, which has a decidedly injurious effect upon the brain and nervous system. Here it was urged that a Wassermann should always be taken, and much can thus be learned. A negative Wassermann, however, must not be regarded as a positive sign that the case is nonspecific. It was stated that we cannot always rely on the laboratory findings in specific cases, that a diagnosis must often be made without them. With disturbed reflexes, the Argyll Robertson pupils, tremors and defective mentality, it is usually not difficult to make a diagnosis of syphilis; or a positive Wassermann, with reflexes gone, tremors and the Argyll Robertson pupils, lead to the same conclusion. As a whole, little can be done for such cases. Some improve on 606; others do not. We may give ten doses, five days apart, and in apparently hopeless cases we can give large doses. We can also make use of active doses of mercury, and the iodids in increasing doses. The treatment must be intensive and persistent.

In opening the discussion, and taking advantage of the opportunity to ask questions, Dr. H. L. Foss asked, "What should be done with the neurotics?" He said, "We study their various functions and find no organic disease; how shall we diagnose and treat them?" Dr. McCarthy said, "There are purely nervous cases, in which we can find little wrong, and we must treat them as such. Rest and active feeding will help not a few of them."

Dr. J. Allen Jackson said he did not know that it was possible to get Dr. McCarthy to come before our society; that he felt deeply indebted to him, as did the other physicians of the county, for coming and giving such a helpful talk on the various cases which he had presented.

On motion, a rising vote of thanks was tendered to Dr. McCarthy for his splendid effort and the courtesy he had extended to our society. No further business appearing, the society adjourned.

J. H. Sandel, Reporter.

NORTHAMPTON—JUNE

The June meeting of the Northampton County Medical Society was held at the Kurtz Restaurant, Bethlehem, June 16, 1922, at 11 a.m., with the president, Delbert K. Santee, presiding.

The following invited guests and speakers were present: Doctors Baldy, Krusen, Johnsonbaugh, Witmore, and the Secretary of the Bucks County Medical Society, Myers. There were also present nearly all the party nominees for office at the fall election and a large delegation representing the League of Women Voters of Easton, Bethlehem, Nazareth, Tatamy, Pen Argyl, and Bangor, eighteen in all. Several nominees from Lehigh County were also present.

Dr. Paul Correll, Easton, and Dr. Francis Dever, Bethlehem, were elected State Society Delegates, with Doctors Thomason and Quiney, Easton, as alternates to Dr. Correll, and Doctors Estes, Jr., and Kleinhans, Bethlehem, as alternates to Dr. Dever.

On motion it was decided that Dr. W. P. O. Thomason, Easton, be recommended to the House of Delegates for District Censor.

On motion, an "Outing Meeting" committee of three, consisting of Doctors Tillman, Kleinhans and Messinger, was appointed.

President Santee appointed Doctors Paul Correll, Tillman and H. E. McCormack, Easton, to draw up suitable resolutions on the death of our esteemed member, Rollo H. Hoey, M.D., of Easton.

The president now declared the society ready to proceed with the program as provided by the Committee on Public Policy and Legislation; and asked Dr. Estes, Sr., to take charge of the program. Dr. Estes informed the invited guests and the members that this was "an educational meeting" and expressed the hope that all present would profit by listening to the various topics discussed, that the coming together would prove advantageous to the common good, and that a mutual understanding would follow on matters of public welfare.

Dr. Estes next introduced Dr. Baldy, Chairman of the State Welfare Bureau, who spoke on "The Needs of the Penal Establishments of the State for the Proper Treatment and Education of Criminals" and "The Necessity of Aid From the Medical Profession and Legislators." The magnanimous mainspring of the State Welfare Chief's business and professional conscience radiates a lively sense of personal responsibility to the taxpayers and citizens of our commonwealth. He evidently chafes for a chance to change the present product of time-worn punitive measures for some newer thought and actions that will fulfill the desire, wants and needs of the god of advancement 'long educational, economic, political, moral and social preferment, pregnant with clear, sane and humane results—the end to justify the means supplied and applied. He appealed to our understanding and warm sympathy in behalf of the cause.

It is apparent that the Welfare Chief undoubtedly has much of the "invisible ingredient"—conscientiousness—which is, should and must be the prime mover in those who are in position and power to emancipate the taxpayer and the Bureau of State Welfare from the inimical circumstances under which our commonwealth is laboring and wearing the yoke of servitude.

State welfare is the product of synthetic paternalism, which product is too costly for a much used, and much abused, commodity. An outstanding feature of Dr. Baldy's ideas and principles is to reduce the "overhead" by changing the remedial measures of punishment. He wishes to prescribe the "work cure" in place of the "rest cure" now so largely in vogue and applied to able-bodied men "doing time."

To Dr. Baldy and those in the know, it is clear that all management should stand the scrutiny of the economic and resultful searchlight's glare when it is turned upon it. When the thumbscrew of public-inquisitiveness and the show-me spirit makes pressure for facts and results, no noneconomic and nonpectizing sap should ooze from welfare ends and means, especially not where the foibles of human nature, disease, poverty and death are the underlying recipients of that management and means.

Crime, poverty and disease are a trio whose treatment, by many, apparently means "coddling." To treat all three tenderly is a parallelism that logic and virtue can hardly sanction. The relations and similarities between crime, poverty and disease, from causative standpoints, are too many times illogically and subtly joined together, whether or no culpable or nonculpable things and conditions were the causative factors.

Dr. Baldy deprecated idleness, purposeless and profitless work or exercise on the part of able-bodied prisoners in penal institutions in our state. He informed us that the state had established laws empowering the several counties to establish penal farms throughout the state by joint action, but that they evidently had not the courage, nor the initiative, nor the will to carry out these laws. He gave as his opinion that it was the state's duty to shoulder the responsibility and establish these penal farms and take care of all prisoners for the counties. He asked that the legislators sanction the establishment of just one penal farm as a starter, buy the land and furnish the money to put up temporary buildings, saying that the labor available from able-bodied prisoners would quickly, under proper management, provide the necessary material and labor to put up stable and permanent buildings to house them; and the profit from the labor would soon buy more farms and the labor build more buildings throughout the state and as needed.

Dr. Baldy claims that the state has many able-bodied prisoners at all times who could and would be able to make bricks and do any and all work necessary to the establishing of such institutions without the expenditure of much money by the state out of the taxpayers' moneys. He said that city and county prisons, where the prisoners had to be fed and housed and kept in idleness and at the taxpayers' expense, were obsolete and inhumane and uneconomical. Penal farms should be established and all able-bodied prisoners made to do purposeful and profitable work, to the end that said institution become self-supporting as near as is possible, and to keep the prisoners from idleness.

Prisoners should earn a little money for themselves, more earnings to be allowed those with families or dependents. Prisoners' families and their dependents should be taken care of; the prisoner must be given a chance to earn money to care for them while undergoing "time," or if not able, then the state should "make good" in the interval, to prevent pauperism or more criminals. He deprecated the repression of the daily acts of life in prisoners. He apparently does not believe in "coddling" prisoners as some reformers would have us to do, but he believes in firm and humane treatment, and which keeps the body and mind in good physical and mental condition while undergoing servitude.

Dr. Baldy made a substantial contribution to an understanding of his welfare program in penal reform with efforts along humane, economic and educational lines; promoting sanity, health and stability in this department, with elimination of much poverty and many causative factors to more crime. It is apparent that Dr. Baldy will be proof against the pressure exerted by sentimentalist and emotional reformers, the self-interested and the illy informed propagandists and their folly.

The doctor is fighting for a chance to change our present inhumane, costly and obsolete system, in accordance with the laws passed by our state, claiming the change to be far less costly to the taxpayer and giving much better results. Evidently, the "rest cure" must go, not only as a remedy in the treatment of criminals, but also in the treatment of feeble-mindedness and many other ills now treated by it.

The adverse facts of our present methods of handling and treating prisoners, presented by the doctor, evidently warrants the change and deserves the help of all of us in the assistance to the cause. May our legislators give aid and comfort and prompt financial assistance.

The doctor's listeners were very eager and tense to get his viewpoints. His talk will undoubtedly guide the hearts and minds of the men and women present and leave an indelible impression on the subject, and the will to pluck fruit from the tree of Truth, especially the saying that "Perfection is an ideal, theoretically attainable, practically a rainbow, but efforts to reach it drag us from the mire of mediocrity and make us better for the striving."

Dr. William P. O. Thomason, of Easton, one of our own members, was next introduced. He spoke on "Things Which Members of the Next Legislature Should Know, Understand and Appreciate." Dr. Thomason tried to establish the necessity of a mutual understanding and confidence between legislators and the organized medical fraternity. He tried to impress our sincerity of purpose and the truthfulness of the facts presented by the speakers of the day and the members of the committees representing our medical bodies.

Dr. Thomason informed the prospective office holders or legislators present that "we want you to know that we believe in you as men as well as lawmakers. We look to you to guard the peoples' interests pertaining to the greatest natural resource of all, health, by appropriate legislation."

Dr. E. A. Krusen, of Norristown, a member of the State Medical Legislative Conference, was next introduced, and spoke on "The Importance of Preserving the Present Law governing the Licensure and Practice of Medicine in the State." His puissant talk was politic and poignant; politic, in a manner adapted to promote the welfare of the people of our commonwealth; poignant, to those who would practice the healing art in our state without the necessary qualifications and the consent of our commonwealth. Dr. Krusen has a pleasing manner of talking and his remarks were greatly appreciated and showed conclusively that he is well versed and qualified to serve our profession in the work of the conference.

Under general discussion Mrs. Tillmore, Mrs. McDowell, Robert Stofflet, Esq., Mr. Hoffman, Mr. Randall, McAlee, Esq., and Doctors Johnsonbaugh, a member of the State Board of Medical Licensure, and Myers, Secretary of the Bucks County Medical Society, made brief and pointed remarks.

On motion of Drs. Green and Dever, the society gave a rising vote of thanks to the speakers of the day and the guests who honored us by their time and presence.

Eighty-six invited guests and members were present. After dinner was served the meeting adjourned.

William A. Finady, Reporter.

SOMERSET—JULY

The Somerset County Medical Society met in Somerset on July 18th with an increased attendance over the previous meeting, which was the best attended meeting for a long while.

This society meets bi-monthly and per consequence has some business to transact at almost every meeting. Delegate and alternate to the House of Delegates at the next meeting of the State Society were elected and a member was recommended for district censor for this censorial district.

After some important business pertaining to our local society, Dr. B. H. Hoke, of Meyersdale, presented a patient with typical Hodgkin's disease with general glandular enlargements. Very few such cases have been treated in this section and quite an interest was taken in the case.

Following this limited clinic, which we think is a very good procedure in sections of the state where hospital facilities cannot be had, and we think more cases should be brought before the society, Dr. Charles E. Hays, of Johnstown, read a paper on "Indications for Opening the Mastoid Bone." The doctor demonstrated his lecture with specimen sections of the parts involved or which may have connection with mastoid abscess. Sections of the ear and mastoid portion were exhibited and demonstrated very fully and satisfactorily, in which all took a great interest. The doctor was questioned very fully and all that were present felt that it was good for them to be there. Doctors Harry Cartin and Barr, of Johnstown, were present and participated in the discussion.

This was undoubtedly the most interesting session we have had for some time, but we have in store for the next meeting, through the influence and favor of Dr. Large, of Meyersdale, picture films that will show the process of fecundation and following this act throughout the whole period of pregnancy to the expulsion of the new being. These pictures will demonstrate all the known forms of pregnancy, of perfect and malformed pelves, and all forms of operative delivery known to the obstetrician up to this date.

We are anticipating one hundred per cent. attendance at the coming meeting of the society, which will be held in Somerset on the third Tuesday of September next, being the nineteenth day of the month.

Members of neighboring societies who may not have an opportunity to see these pictures elsewhere are invited to be present. H. C. McKinley, Reporter.

WYOMING—AUGUST

The Wyoming County Medical Society much enjoyed their annual outing meeting, August 2, 1922, at Nicholson.

Dinner was served at Hotel Almont, after which the physicians present assembled in the meeting room and Dr. Peter P. Mayock, Chief of the G. U. Clinic at Wilkes-Barre, gave a very interesting talk on this work as conducted in Wilkes-Barre. He particularly stressed the valuable coöperation of the city and county officials in this great undertaking.

Dr. Geo. W. Norris, Professor of Clinical Medicine, University of Pennsylvania, was next introduced and gave a very comprehensive and highly instructive paper on diseases of the heart. This paper was very much enjoyed by all the men present and Dr. Norris was congratulated on the able way in which he discussed this subject.

Dr. C. L. Stevens, of Athens, talked on State Medical Society work and particularly medical protection as a function of the society.

Dr. Donald Guthrie, of Sayre, gave a very good talk as Trustee and Councilor representing the State Society.

The following doctors were present: Norris, Guthrie, Stevens, Mayock, Weinberger, Austin, Gardner, Newman, Zeller, Simell, Snyder, Birchard, Saxer, Lee, Beaumont, Prevost, Underwood, Rauch, Kinner, Decker, Diller, Niles, Haines, Smith, Katy, Dennison and McKown. H. L. McKown, Secretary.

STATE NEWS ITEMS

DEATHS

Dr. Oreon Staples Rhodes, of East Stroudsburg (University of Pennsylvania, 1889), died on July 5th of diabetes, at the age of 59.

Dr. Benjamin L. Kershner, of Dalmatia, graduate of Jefferson Medical College, 1871, died August 3d, of cerebral hemorrhage, aged 72 years.

Dr. William Jacob Haymaker, of Export, a graduate of Jefferson Medical College, 1890, died on June 21st, aged 57 years, after a long illness.

Dr. Edward C. Wagner, of Wilkes-Barre (University of Pennsylvania School of Medicine, 1890), died on July 9th, of heart disease, aged 66 years.

Dr. Charles Douglas Miller, Pottsville, died of pernicious anemia, on July 24th, aged 61. He was a member of the class of 1884, Jefferson Medical College.

Dr. Charlotte S. Farrington, of Philadelphia, graduate of Woman's Medical College, class of 1901, died on July 12th, at the Presbyterian Hospital, Philadelphia, of heart disease, aged 52 years.

The death of Dr. J. Lawson Cameron, of Philadelphia, took place on July 26, 1922, at Ocean Grove, N. J. Dr. Cameron was 67 years of age, and a graduate of the Medico-Chirurgical College of Philadelphia, class of 1888.

Dr. Edwin R. Rasely, Uniontown, was found dead in his photographic dark room, accidentally electrocuted, on July 12th. Dr. Rasely was 55 years of age, and was a graduate of the Medico-Chirurgical College, class of 1891.

Dr. George Y. MacCracken, of Philadelphia, died on July 26th, from cerebral hemorrhage, while on his vacation in Yellowstone National Park. Dr. MacCracken was born in 1855 and was graduated from the University of Pennsylvania School of Medicine in 1876.

Dr. Howell Shoener Zulick, of Philadelphia, clinical professor of dermatology at the University of Pennsylvania and lecturer on dermatology at Temple University, was found dead in his chair on June 23d, from heart disease. He was 39 years of age and was a graduate of the Medico-Chirurgical College of Philadelphia, 1909.

Dr. Edward Anthony Spitzka, of Mount Vernon, N. Y., died at his home on September 4th, of apoplexy, aged 46. Dr. Spitzka was an authority on the anatomy of the brain, and an author of note. From 1906 to 1914 he was Professor of Anatomy at Jefferson Medical College, and from 1911 to 1914 he was director of the Daniel Baugh Institute of Anatomy, Philadelphia. He is survived by his wife, Mrs. Pauline Eberspacher Spitzka, his mother, and his son Jefferson.

Dr. David M. McMasters died August 5th at his home in Russellton, aged 74. He was born in Pittsburgh, was a graduate of Jefferson College, and a member of the Allegheny County Medical Society. He leaves his widow, Mrs. Sarah Sutton McMasters; a son, Frank M. McMasters, of Gary, Ind.; two daughters, Mrs. John Collier, of Russelton, and Mrs. John Sirich, of Pittsburgh; a sister, Mrs. R. E. Stewart; and four grandchildren.

Dr. Joseph L. Duncan, Jr., of Pittsburgh, died July 27th, in the Presbyterian Hospital, aged 50 years. Dr. Duncan was a son of the late Dr. James A. Duncan, and had lived in Pittsburgh all his life. He specialized in ophthalmology and was associated in practice with Dr. James A. Lippincott. He was a member of his County and State Medical Societies and of the A. M. A., as well as of the American Ophthalmometrical Society. He is survived by his brother, Louis S. Duncan, of Pittsburgh.

Dr. Robert L. Allison, of Eau Claire, died July 25th as the result of paralysis. He was 62 years of age and a native of Center Township, Butler County, being the son of William and Rachel Gilliland Allison. He received his preliminary education in the old acadamy at West Sunbury and in Wooster College, Wooster, Ohio, and obtained his degree in medicine from the Medical College of Indianapolis, Ind. He practiced his profession at Eau Claire for more than thirty years, and has been active in the affairs of his community. He is survived by the following children, his wife, who was Miss Minnie Breaden, having died seven years ago: DeWitt, of Parkers Landing; Eugene, of Eau Claire, and Mrs. Pollock Johnston, of Ellwood City. He is also survived by a brother, John Allison, of Pittsburgh.

Alexander Richter Craig, M.D., Secretary of the American Medical Association, died September 3d, at Port Deposit, Md., where he had been spending his vacation with his family. His death was caused by a complication of diseases, and occurred after a short illness. Dr. Craig was born at Columbia, Pa., July 31, 1868, the son of Dr. Alexander Craig and Eleanor Margaretta (Richter) Craig. He was graduated from Franklin and Marshall College in 1890, and took his A.M. degree in 1893. In 1893 he was graduated from the Medical School of the University of Pennsylvania, where he was a popular member of the student body, having been elected president of his class. In 1899 he was united in marriage with Miss Florence C. Bromwell, of Port Deposit, Md. Dr. Craig began his medical career in Philadelphia, where he practiced until 1895, removing then to Columbia, Pa., where he practiced until 1906. He then returned to Philadelphia, and in June, 1911, was elected Secretary of the American Medical Association, which necessitated his removal to Chicago. Dr. Craig was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, the American Medical Association, the American Academy of Medicine, of which he was president in 1912, the American Academy of Ophthalmology and Otolaryngology, Columbia Lodge, Free and Accepted Masons, the University Club, Philadelphia, and the City Club, Chicago. He is survived by his wife and two daughters, the Misses Margaretta and Rhoberta; two sisters, the Misses Elizabeth and Eleanor Craig, of Columbia, and one brother, Wash. R. Craig, of St. Mary's, Pa.

ITEMS

Born, to Dr. and Mrs. John A. Logan, Hatboro, on July 11th, a son, John Bronson Logan.

Dr. P. McDowell Tibbins, of Beech Creek, was recently united in marriage to Miss Grace Bloom, of Sunbury.

Dr. and Mrs. Elmer E. Pownall, of Richboro, have returned to their home after a several weeks' camping trip through New York State.

The engagement of Dr. Joseph Pomeroy Maclay, of Chambersburg, and Miss Lou Etta Ehanabrook, of York, has recently been announced.

Dr. and Mrs. E. E. Darlington, of Harrisburg, have announced the engagement of their sister, Miss Jean E. Smith, to Dr. George F. Gracey, of the same city.

Dr. and Mrs. Joseph Scattergood and daughter, of West Chester, spent a very delightful vacation touring the mountainous sections of New York and Pennsylvania by automobile, during early August. One of the principal points of interest on their trip was a visit to their son at Rocky Pond Camp, which is conducted under the direction of Dr. Martha Tracy, Dean of the Woman's Medical College of Philadelphia, at Clemons, N. Y.

GENERAL NEWS ITEMS

THE POSTGRADUATE SCHOOL OF NEUROLOGY AND PSYCHIATRY OF THE DISTRICT OF COLUMBIA

Under the title of he Postgraduate School of Neurology and Psychiatry of the District of Columbia, a school for the graduate teaching of diseases of the nervous system has been recently organized in Washington, and will open formally in October. Dr. Wm. A. White, Superintendent of St. Elizabeth's Hospital, is President of the Institution; Dr. Tom A. Williams, Vice-President; Dr. Daniel D. V. Stuart, Jr., Secretary-Treasurer; and Dr. D. Percy Hickling, Dean of the faculty. Two courses of study, elementary and advanced, of six weeks each, are to be offered; together with an elective course in special subjects.

THE WOMEN'S FOUNDATION FOR HEALTH, INC.

has established headquarters at 43 East Twenty-Second Street, New York City. Since its organization in the fall of 1919, the work of developing and carrying out the plans of the Foundation has been done by widely scattered individuals and organizations who have contributed freely of their time and resources. A part of that work has been to formulate a program and to prepare a series of six pamphlets to be used as a common text for the interpretation of that program. This series which is known as the Positive Health Series is now ready for distribution. A set of six posters, accompanying the series, puts forth the organization, purpose, and significant points of the program. The first of these defines the purpose of the Foundation as follows:

"To correlate the Health Activities of National Women's Organizations and to put on a program emphasizing the positive phase of Health." The same poster lists the present coöperating organizations:

American Association of University Women.
American Home Economic Association.
Council of Jewish Women.
General Federation of Women's Clubs.
Medical Women's National Association.
National Association of Deans of Women.
National Board Young Women's Christian Associations.
National Congress of Mothers and Parent-Teacher Associations.
National Council of Women.
National Federation of Business and Professional Women's Clubs.
National League of Women Voters.
National League of Girls' Clubs.
National Woman's Christian Temperance Union.
National Women's Trade Union League.
Women's Department: National Civic Federation.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

CALL TO 1922 SESSION

The object of this notice is to inform the members of the 1922 House of Delegates that in addition to the usual business incidental to the annual session, the subject-matter of the revision of the Constitution and By-Laws will be up for consideration and action, October 2-5, 1922.

COMMITTEES OF THE HOUSE OF DELEGATES

COMMITTEE ON CREDENTIALS

- Dr. Arthur E. Crow, Chairman, Uniontown.
- Dr. M. Edith MacBride, Sharon.
- Dr. Charles J. Cummings, Williamsport.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

- Dr. J. Paul Roebuck, Chairman, Lancaster.
- Dr. William H. Taylor, Irwin.
- Dr. Cloyd B. Brumbaugh, Huntingdon.

REFERENCE COMMITTEE ON NEW BUSINESS

- Dr. J. Norman Henry, Chairman, Philadelphia.
- Dr. James L. Seibert, Bellefonte.
- Dr. G. O. O. Santee, Cressona.

COMMITTEE ON SCIENTIFIC BUSINESS

- Dr. Clarence R. Phillips, Chairman, Harrisburg.
- Dr. Fred Fisher, Erie.
- Dr. Richard J. Behan, Pittsburgh.

MEMBERS OF THE HOUSE OF DELEGATES*

ADAMS COUNTY

- J. McCrae Dickson, Gettysburg, Pres.
  - J. Percival Dalbey, Getysburg, Secy.
- Edgar A. Miller, East Berlin.
  - William E. Wolff, Arendtsville.

ALLEGHENY COUNTY (PITTSBURGH)

- Walter F. Donaldson, 8103 Jenkins Arcade, Pres.
  - Wilton H. Robinson, Jenkins Arcade.
- Carey J. Vaux, City County Bldg.
  - William H. Mayer, 5075 Jenkins Arcade, Secy.
  - Frederick B. Utley, Highland Bldg.
- John M. Thorne, Jenkins Arcade.
  - Franklin B. Miller, Fulton Bldg.
  - Henry T. Price, Westinghouse Bldg.
- Harold A. Miller, Pittsburgh Life Bldg.
  - C. Bradford McAboy, East End Trust Bldg.
  - Evan W. Meredith, Jenkins Arcade.
- Edward E. Mayer, Jenkins Arcade.
  - John M. Luther, Jenkins Arcade.
  - William Clark Maxwell, Highland Bldg.
- George W. McNeil, Liberty Bldg.
  - Walter A. Dearth, Jenkins Arcade.
  - James LeRoy Foster, Freeport Rd., Hoboken.
- Charles B. Maits, 6692 Kinsman Rd.
  - James A. Lindsay, Jenkins Bldg.
  - Edward P. Logan, 516 Federal St.
- Edward B. Heckel, Jenkins Bldg.
  - Lester H. Botkin, 120 Kennedy Ave., Duquesne.
  - Sidney A. Chalfant, Jenkins Arcade.
- John W. Worrell, 110 S. Fairmount Ave.
  - George L. Beswick, 200 Caldwell Ave., Wilmerding.
  - Frederick T. Billings, 626 Union Arcade.
- William H. Mayer, Jenkins Arcade.
  - Thomas W. Grayson, Jenkins Arcade.
  - J. Donald Iams, Jenkins Arcade.
- Richard J. Behan, Jenkins Arcade.
  - David D. Kennedy, 5500 Dunmoyle Pl.
  - Frank E. Kenworthy, E. E. Trust Bldg.
- Joseph E. Willetts, Jenkins Arcade.
  - Frederick Wohlwend, Tarentum.
  - William J. K. Snyder, Avalon.

ARMSTRONG COUNTY

- Oren C. Campbell, Ford City, Pres.
  - Jay B. F. Wyant, Kittanning, Secy.
- Ellis C. Winters, Ford City.
  - Frederick C. Monks, Kittanning.
  - Andrew J. Sedwick, Kittanning.

BEAVER COUNTY (ROCHESTER)

- Francis H. McCaskey, 166 Penna. Ave., Pres.
  - Boyd B. Snodgrass, Rochester, Secy.
- Jefferson H. Wilson, Beaver.
  - Guy S. Shugert, Rochester.

BEDFORD COUNTY

- Walter F. Enfield, Bedford, Pres.
  - Norman A. Timmins, Bedford, Secy.
- William C. Miller, P. O. Box 1109, Harrisburg.
  - Walter F. Enfield, Bedford.

BERKS COUNTY (READING)

- Winfield H. Ammarell, Birdsboro, Pres.
  - John E. Livingood, 249 N. Fifth St., Secy.
- Frank P. Lytle, Birdsboro.
  - Ralph L. Reber, 147 N. Fourth St.
  - John S. Borneman, Boyerstown.
- Abner H. Bauscher, 336 N. Fifth St.
  - Robert M. Alexander, 644 Elm St.
  - Charles W. Bachman, 221 N. Sixth St.

BLAIR COUNTY (ALTOONA)

- Walter S. Musser, Tyrone, Pres.
  - Charles F. McBurney, 604 Ninth St., Secy.
- W. Albert Nason, Roaring Springs.
  - Augustus A. Kech, 1410 Twelfth Ave.
  - John R. T. Snyder, 404 Howard Ave.

BRADFORD COUNTY

- Howard C. Down, Towanda, Pres.
  - Cyrus Lee Stevens, Athens, Secy.
- Cyrus Lee Stevens, Athens.
  - C. Melvin Coon, Athens.
  - Donald Guthrie, Sayre.

BUCKS COUNTY

- Elmer E. Pownall, Richboro, Pres.
  - Anthony F. Myers, Blooming Glen, Secy.
- J. Fred Wagner, Bristol.
  - John A. Weierbach, Quakertown.
  - Roscoe A. Magill, Newhope.

BUTLER COUNTY (BUTLER)

- John V. Cowden, 228 S. Main St., Pres.
  - L. Leo Doane, Reiber Bldg., Secy.
- J. Clinton Atwell, 315 N. Main St.
  - Thomas McC. Maxwell, 214 W. Cunningham St.

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*(The offset names are the alternates, and where street address only is given, the name of the city follows the name of the county.)

CAMBRIA COUNTY (JOHNSTOWN)

Harry H. Penrod, 409 Vine St., Pres.
Joseph J. Meyer, 425 Lincoln St., Secy.
Frank U. Ferguson, Gallitzin.
Harry Somerville, Chest Springs.
Edward Pardoe, South Forks.
William E. Grove, 406 Main St.
John W. Barr, Swank Bldg.
George Hay, 342 Locust St.

CARBON COUNTY

*Jacob H. Behler, Nesquehoning, Pres.
Jacob A. Trexler, Lehighton, Secy.
Alexander Armstrong, White Haven.
Roger P. Batchelor, Palmerton.
Robert A. Christman, Weissport.

CENTER COUNTY

Oscar W. McEntire, Howard, Pres.
Melvin Locke, Bellefonte, Secy.
James L. Seibert, Bellefonte.
David Dale, Bellefonte.
Joseph P. Ritenour, State College.

CHESTER COUNTY

William W. Betts, Chadds Ford, Pres.
Joseph Scattergood, West Chester, Secy.
Henry Pleasants, Jr., West Chester.
W. Wellington Woodward, West Chester.
Thomas G. Aiken, Berwyn.

CLARION COUNTY

James M. Hess, Tylersburg, Pres.
Charles C. Ross, Clarion, Secy.
Charles A. Fitzgerald, Clarion.
Albert J. Hepler, New Bethlehem.
Charles C. Huston, Knox.

CLEARFIELD COUNTY (CLEARFIELD)

James A. Miller, Grampian, Pres.
James M. Quigley, 922 Dorey St., Secy.
Ward O. Wilson, Clearfield.
Floyd G. Patterson, Dubois.
Earl E. Houck, Dubois.

CLINTON COUNTY

Marsden D. Campbell, Logantown, Pres.
Robert B. Watson, Lock Haven, Secy.
David W. Thomas, Lock Haven.
John B. Critchfield, Lock Haven.
Clair B. Kirk, Mill Hall.

COLUMBIA COUNTY

Frank R. Clark, Berwick, Pres.
Luther B. Kline, Catawissa, Secy.
William C. Hensyl, Berwick.
Charles K. Albertson, Benton.
John C. Wintersteen, Bloomsburg.

CRAWFORD COUNTY

Walter W. Shaffer, Meadville, Pres.
Cornelius C. Laffer, Meadville, Secy.
Oliver H. Jackson, Meadville.
Arne W. Clouse, Geneva.
J. Charles McFate, Meadville.

CUMBERLAND COUNTY

Seth A. Cadwallader, West Fairview, Pres.
Calvin R. Rickenbaugh, Carlisle, Secy.
Harry A. Spangler, Carlisle.
Samuel E. Mowery, Mechanicsburg.
Henry C. Lawton, Camp Hill.

DAUPHIN COUNTY (HARRISBURG)

Herbert F. Gross, 1501 N. Second St., Pres.
Andrew J. Griest, Steelton, Secy.
Earl R. Whipple, Steelton.
Frank F. D. Reckord, 1006 N. Second St.
Constantine P. Faller, 236 State St.
Clarence R. Phillips, 1646 N. Third St.
W. Tyler Douglass, 1634 Derry St.
Carson Coover, 223 Pine St.

DELAWARE COUNTY (CHESTER)

John Byers, Roxby, Swarthmore, Pres.
Walter E. Egbert, 601 E. Thirteenth St., Secy.
C. Irwin Stiteler, Fifth and Welsh Sts.
Harry C. Donahoo, 511 Kerlin St.
Harry Gallager, Seventh St. and Concord Ave.

ELK COUNTY

John C. McAlister, Ridgway, Pres.
Samuel G. Logan, Ridgway, Secy.
Samuel G. Logan, Ridgway.
Walter C. Shaw, Ridgway.
James G. Flynn, Ridgway.

ERIE COUNTY (ERIE)

Charles C. Kemble, 146 W. Ninth St., Pres.
Roy S. Minerd, 128 W. Eighth St., Secy.
Fred Fisher, 343 E. Sixth St.
Fred E. Ross, 132 W. Ninth St.
Ford Eastman, Masonic Temple.
Chester H. McCallum, 219 W. Eighth St.
Thomas P. Tredway, 233 W. Eighth St.
Charles G. Strickland, 153 W. Seventh St.

FAYETTE COUNTY

George H. Robinson, Uniontown, Pres.
Robert E. Heath, Fairchance, Secy.
Charles H. Smith, Uniontown.
Harry C. Hoffman, Connellsville.
Arthur E. Crow, Uniontown.
Lowry N. Burchinal, Point Marion.

FRANKLIN COUNTY

Harry M. Miley, Chambersburg, Pres.
John J. Coffman, Scotland, Secy.
Frank N. Emmert, Chambersburg.
John W. Croft, Waynesboro.
Thomas D. White, Orrstown.

GREENE COUNTY

Rufus E. Brock, Waynesburg, Pres.
Harry C. Scott, Waynesburg, Secy.
Lindsay S. McNeely, Kirby.
Arthur T. Murray, Nineveh.
W. Sturgis Frankenberger, Carmichaels.

HUNTINGDON COUNTY

Fred R. Hutchison, Huntingdon, Pres.
John M. Beck, Alexandria, Secy.
Cloyd B. Brumbaugh, Huntingdon.
George G. Harman, Huntingdon.
John M. Beck, Alexandria.

INDIANA COUNTY

Alexander M. Stewart, Indiana, Pres.
James M. Torrence, Indiana, Secy.
James C. Glasser, Dixonville.
William E. Dodson, Indiana.
Malcolm L. Raymond, Waterman.

JEFFERSON COUNTY

Irvin R. Mohney, Brookville, Pres.
Norman C. Mills, Eleanor, Secy.
John H. Murray, Punxsutawney.
Harry B. King, Reynoldsville.
Norman C. Mills, Eleanor.

JUNIATA COUNTY

John W. Deckard, Richfield, Pres.
Brady F. Long, Mifflin, Secy.
William H. Banks, Mifflintown.
Samuel F. Metz, Thompsontown.

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*Deceased.

LACKAWANNA COUNTY (SCRANTON)

James D. Lewis, 204 W. Market St., Pres.
Jacob J. Lonsdorf, Jr., Cor. Pittston Ave. and Beech St., Secy.
Daniel A. Webb, 234 Connell Bldg.
W. Roland Davies, Traders Bank Bldg.
D. Webster Evans, 157 S. Main St.
Arthur E. Davis, Hotel Holland.
James J. O'Connor, Olyphant.
Frederick J. Bishop, 220 Connell Bldg.

LANCASTER COUNTY (LANCASTER)

Joseph P. Kennedy, Columbia, Pres.
Horace C. Kinzer, 128 N. Duke St., Secy.
J. Paul Roebuck, 233 N. Duke St.
Clarence R. Farmer, 573 W. Lemon St.
Frank Alleman, 420 W. Chestnut St.
Harry B. Roop, Columbia.
Tobias C. Shookers, 146 N. Prince St.
Edgar J. Stein, 225 N. Duke St.

LAWRENCE COUNTY

Henry C. Mitchell, New Castle, Pres.
William A. Womer, New Castle, Secy.
Loyal W. Wilson, New Castle.
William C. Burchfield, New Castle.
Robert G. Boak, New Castle.

LEBANON COUNTY

John E. Marshall, Lebanon, Pres.
W. Horace Means, Lebanon, Secy.
J. DeWitt Kerr, Lebanon.
Edward H. Gingrich, Lebanon.
Seth A. Light, Lebanon.

LEHIGH COUNTY (ALLENTOWN)

Isadore J. Weida, Emaus, Pres.
J. Treichler, Butz, Room 311, City Hall, Secy.
Frederick R. Bausch, 109 N. Second St.
George F. Seiberling, 956 Hamilton St.
Frederick B. Harding, 959 Hamilton St.
David H. Parmet, 436 Tilghman St.
John W. Noble, 36 N. Jefferson St.
Frank S. Boyer, 16 N. Second St.

LUZERNE COUNTY (WILKES-BARRE)

Walter Davis, 24 S. Washington St., Pres.
Edward W. Bixby, 61 W. Ross St., Secy.
Elmer L. Meyers, 239 S. Franklin St.
Gordon E. Baker, 1250 Wyoming Ave., Forty-Fort.
Lewis H. Taylor, 83 S. Franklin St.
Lewis Edwards, 790 Market St., Kingston.
Charles H. Miner, 115 S. Franklin St.
August Trapold, 239 S. Franklin St.
Herbert B. Gibby, 96 S. Franklin St.
Peter P. Mayock, 70 S. Main St.
Maurice B. Ahlborn, 99 N. Franklin St.

LYCOMING COUNTY (WILLIAMSPORT)

John A. Campbell, 838 Funston Ave., Pres.
Walter S. Brenholtz, 151 E. Third St., Secy.
Harry J. Donaldson, 106 E. Third St.
J. Gibson Logue, Larrivee Bldg.
Joseph W. Albright, Muncy.
Charles J. Cummings, 755 W. Fourth St.
Alem P. Hull, Montgomery.
William E. Delaney, 854 W. Third St.

MC KEAN COUNTY

F. Wade Paton, Bradford, Pres.
Francis De Caria, Bradford, Secy.
Henry J. Nichols, Bradford.
Louis D. Joseph, Bradford.
F. Wade Paton, Bradford.

MERCER COUNTY

Joseph H. Reed, Sharon, Pres.
M. Edith MacBride, Sharon, Secy.
M. Edith MacBride, Sharon.
Paul T. Hope, Mercer.
George W. Kennedy, Sharon.

MIFFLIN COUNTY

William H. Kohler, Milroy, Pres.
James A. C. Clarkson, Lewistown, Secy.
Samuel W. Swigart, Lewistown.
Charles C. Stambaugh, Reedsville.

MONROE COUNTY

Charles S. Logan, Stroudsburg, Pres.
William R. Levering, Stroudsburg, Secy.
George S. Travis, East Stroudsburg.
Charles S. Flagler, Stroudsburg.
William R. Levering, Stroudsburg.

MONTGOMERY COUNTY

George W. Miller, Norristown, Pres.
Edgar S. Buyers, Norristown, Secy.
J. Newton Hunsberger, Norristown.
John G. Wilson, Norristown.
J. Elmer Gotwals, Phœnixville.
Herbert A. Bostock, Norristown.
Winfred J. Wright, Skippack.
Albert Roland Garner, Norristown.

MONTOUR COUNTY

Horace V. Pike, Danville, Pres.
John H. Sandel, Danville, Secy.
J. Allen Jackson, State Hospital, Danville.
Carl E. Ervin, Geisinger Hospital, Danville.
Ernest T. Williams, Danville.

NORTHAMPTON COUNTY

Delbert K. Santee, Bethlehem, Pres.
Victor S. Messinger, Easton, Secy.
Paul R. Correll, Easton.
William P. O. Thomason, Easton.
James J. Quiney, Easton.
Francis J. Dever, Bethlehem.
William L. Estes, Jr., Bethlehem.
Paul H. Kleinhans, Bethlehem.

NORTHUMBERLAND COUNTY

E. Roger Samuel, 6 N. Oak St., Mt. Carmel, Pres.
Charles H. Swenk, 235 Market St., Sunbury, Secy.
Horatio W. Gass, 910 Market St., Sunbury.
Harry T. Simmonds, Shamokin.
Lester E. Schoch, Shamokin.

PERRY COUNTY

William G. Morris, Liverpool, Pres.
Maurice I. Stein, New Bloomfield, Secy.
Lenus A. Carl, Newport.

PHILADELPHIA COUNTY (PHILADELPHIA)

J. Norman Henry, 1906 Spruce St., Pres.
William S. Wray, 2009 Chestnut St., Secy.

Term expiring 1922

J. Norman Henry, 1906 Spruce St.
Henry B. Kobler, Sixty-third and Media Sts.
McCluney Radcliffe, 1906 Chestnut St.
William N. Bradley, 1725 Pine St.
I. Rendall Strawbridge, 1418 N. Fifteenth St.
William S. Higbee, 1703 S. Broad St.
George C. Yeager, 1419 E. Susquehanna Ave.
John A. Kolmer, Cynwyd (Montgomery Co.).
Irving W. Hollingshead, 123 S. Eighteenth St.
William C. Ely, 3912 Chestnut St.
John F. Sinclair, 4103 Walnut St.
Myer Solis-Cohen, 1833 Pine St.
Charles A. E. Codman, 4116 Spruce St.
John A. McGlinn, 113 S. Twentieth St.
Irwin S. Meyerhoff, 1727 N. Sixteenth St.

J. Montgomery Baldy, 409 Lincoln Bldg.
*J. Morton Boice, 4020 Spruce St.
Henry Page, 315 S. Sixteenth St.
*Samuel C. Falls, 743 S. Sixty-third St.
William B. Scull, 3024 Richmond St.
R. Powers Wilkinson, 1613 S. Broad St.
Moses Behrend, 1738 Pine St.
Charles S. Potts, 2018 Chestnut St.
J. Torrence Rugh, Medical Arts Building.
Addinell Hewson, 2120 Spruce St.
Edward B. Krumbhaar, Box 4310, Chestnut Hill.
Seth A. Brumm, 818 Stock Exchange Bldg.
Edward J. Moore, 1619 Arch St.
Frank White, 4331 Chestnut St.
Edwin P. Longaker, 1806 Spruce St.
Frances C. Van Gasken, 115 S. Twenty-second St.
Mary T. Miller, 313 N. Thirty-third St.
W. Hersey Thomas, Medical Arts Building.

Term expiring 1923

William S. Higbee, 1703 S. Broad St.
R. Powers Wilkinson, 1613 S. Broad St.
Dudley T. Cooke, 1536 S. Broad St.
John Welsh Croskey, 1909 Chestnut St.
Joseph McIver, 4634 Chester Ave.
Russell S. Boles, Overbrook Ave. and Fifty-third St.
Thomas R. Currie, 512 W. Lehigh Ave.
Charles F. Nassau, 1710 Locust St.
Vincent J. Fenerty, 2217 E. Cumberland Ave.
Arthur C. Morgan, 2018 Chestnut St.
Irwin S. Meyerhoff, 1727 N. Sixteenth St.
James F. Donnelly, 1605 N. Fifteenth St.
Edward A. Shumway, 2046 Chestnut St.
E. Quin Thornton, 1331 Pine St.
Rae S. Dorsett, 213 S. Forty-sixth St.
George Wilson, 5000 Walnut St.
Elmer H. Funk, 1318 Spruce St.
P. Brooke Bland, 1621 Spruce St.
John A. McGlinn, 133 S. Twentieth St.
Frederick S. Baldi, 2117 Porter St.
Damon B. Pfeiffer, 2028 Pine St.
Paul B. Cassidy, 2037 Pine St.
D. Clinton Guthrie, 722 N. Fortieth St.
William T. Hamilton, 1221 W. Lehigh Ave.
T. Turner Thomas, 1905 Chestnut St.
L. Napoleon Boston, 2024 Chestnut St.
Samuel A. Carpenter, 2265 N. Sixteenth St.

POTTER COUNTY

Elwin H. Ashcraft, Coudersport, Pres.
F. Gurney Reese, Coudersport, Secy.
James T. Hurd, Galeton.
Nathan W. Church, Ulysses.

SCHUYLKILL COUNTY

John J. Dailey, McAdoo, Pres.
Arthur B. Fleming, Tamaqua, Secy.
George O. O. Santee, Cressona.
George R. S. Corson, Pottsville.
Harry H. Stewart, Pottsville.
Joseph T. Murphy, Pottsville.
Lyman D. Heim, Schuylkill Haven.

SNYDER COUNTY

A. Jerome Herman, Middleburg, Pres.
Edwin M. Miller, Beavertown, Secy.
Edward W. Toole, Selins Grove.
Percival J. Herman, Selins Grove.
Edwin M. Miller, Beavertown.

SOMERSET COUNTY

Jacob T. Bowman, Somerset, Pres.
H. Clay McKinley, Meyersdale, Secy.
Charles P. Large, Meyersdale.
Charles B. Korns, Sipesville.

SULLIVAN COUNTY

Martin E. Herrmann, Dushore, Pres.
Carl M. Bradford, Canton, Secy.
Martin E. Herrmann, Dushore.
Justin L. Christian, Lopez.

SUSQUEHANNA COUNTY

Abram E. Snyder, New Milford, Pres.
Edward R. Gardner, Montrose, Secy.
Fred S. Birchard, Montrose.
Dever J. Peck, Susquehanna.
Horace D. Washburn, Susquehanna.

TIOGA COUNTY

Lloyd G. Cole, Blossburg, Pres.
Solomon P. Hakes, Tioga, Secy.
John H. Doane, Mansfield.
Charles R. Smith, Tioga.
Henry C. Harkness, Mansfield.

UNION COUNTY

Amos V. Persing, Allenwood, Pres.
Charles A. Gundy, Lewisburg.
Ralph Steans, Lewisburg.
Lewis E. Wolfe, New Berlin.
Harry R. Thornton, Lewisburg.

VENANGO COUNTY

Rose M. Dunn, Franklin, Pres.
John F. Davis, Oil City, Secy.
F. Earle Magee, Oil City.
Clifford Cooper, Titusville.
Paul R. Cunningham, Franklin.

WARREN COUNTY (WARREN)

Willis M. Baker, 205 Third Ave., Pres.
Elizabeth S. Beaty, 100 East St., Secy.
Michael V. Ball, 214 Penna. Ave., W.
Robert B. Mervine, Sheffield.
Erwin S. Briggs, 32 Water St.

WASHINGTON COUNTY

Edgar M. Hazlett, Washington, Pres.
Charles C. Cracraft, Claysville, Secy.
William D. Martin, Dunn's Station.
John B. McMurray, Washington.
Charles L. Harsha, Canonsburg.
James H. Corwin, Washington.
Fred. C. Stahlman, Charleroi.
Audley O. Hindman, Burgettstown.

WAYNE COUNTY

William T. McConvill, Honesdale, Pres.
Edward O. Bang, S. Canaan, Secy.
Arthur J. Simons, Newfoundland.
Harry C. White, Ariel.
Allen A. Berlin, Newfoundland.

WESTMORELAND COUNTY

Frank C. Katherman, Whitney, Pres.
Myers W. Horner, Mount Pleasant, Secy.
Charles D. Ambrose, Ligonier.
Harry W. Tittle, New Florence.
Bert Haughwout, Derry.
William H. Taylor, Irwin.
Ellsmer L. Piper, Export.
Urban H. Reidt, Jeannette.

WYOMING COUNTY

Van C. Decker, Nicholson, Pres.
Herbert L. McKown, Tunkhannock, Secy.
William W. Lazarus, Tunkhannock.
T. Oliver Williams, Tunkhannock.

YORK COUNTY (YORK)

Curtis J. Hamme, Dover, Pres.
Gibson Smith, 222 S. George St., Secy.
Samuel K. Pfaltzgraff, 440 W. Market St.
George E. Holtzapple, George and Princess Sts.
Louis S. Weaver, 3 E. Market St.
Lawton M. Hartman, 412 W. Market St.
J. Ferdinand Klinedinst, 220 S. George St.
Isaac C. Gable, 46 S. Beaver St.

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*Deceased.

REPORTS OF OFFICERS AND COMMITTEES

REPORT OF THE SECRETARY

To the President and House of Delegates:

Per Capita Receipts, August 27, 1921, to August 17, 1922:		
For 1921 Assessment 117 members (inc. 70 half year members),.....	$410.00	
For 1922 Assessment 7,202 members (inc. 5 half year members),	35,997.50	
		$36,407.50
Medical Defense Allotment, ..	$5,458.51	
Medical Benevolence Allotment,	1,091.71	
Endowment Fund, ...	1,200.00	
		7,750.22
Net from dues available for current expenditures		$28,657.28
Gross receipts from JOURNAL, ...		7,542.53
Gross receipts from Scientific Exhibit, ..		5,314.50
		$41,514.31
Rebated to Philadelphia County Society on account of Medical Defense, ...		492.50
Total receipts available for current administrative expenditures, ...		$41,021.81
Total current administrative expenditures, ...		37,493.31

Chief items of administrative expenditure.

PENNSYLVANIA MEDICAL JOURNAL, ...	$17,690.47
Executive secretary's office, ...	8,845.47
Annual session, ...	5,286.50
Secretary's office, ...	3,279.10
Traveling expenses, ...	879.72

MEMBERSHIP

The total paid membership August 17, 1921, was 7,221; the total paid membership August 17, 1922, was 7,202, with the following component society distribution for 1921 and 1922 respectively: Adams County—26,26; Allegheny—1169,*1195;* Armstrong—60,58; Beaver—60,*62;* Bedford—17,16; Berks—131,*138;* Blair—86,82; Bradford—51,50; Bucks—84,78; Butler 49,*50;* Cambria—120,*129;* Carbon—29,29; Center—28,28; Chester—77,72; Clarion—32,31; Clearfield—61,*66;* Clinton—26,22; Columbia—47,44; Crawford—55,53; Cumberland—41,41; Dauphin—151,*153;* Delaware—87,*90;* Elk—27,25; Erie—124,*131;* Fayette—116,115; Franklin—55,53; Greene—26,*28;* Huntingdon—38,*39;* Indiana—62,60; Jefferson—47,*53;* Juniata—13,12; Lackawanna—207,194; Lancaster—126,128; Lawrence—60,57; Lebanon—31,*37;* Lehigh—100,*107;* Luzerne—231,224; Lycoming—105,*113;* McKean—44,43; Mercer—75,74; Mifflin—26,25; Monroe—13,*15;* Northumberland—60,59; Perry—17,15; Philadelphia—2035,1970; Potter—15,15; Schuylkill—104,*113;* Snyder—12,11; Somerset—44,*45;* Sullivan—8,8; Susquehanna—21,17; Tioga—31,30; Union—19,17; Venango—58,54; Warren—48,48; Washington—126,122; Wayne—27,27; Westmoreland—149,*151;* Wyoming—14,11; York—122,*124.*

During the year death removed ninety-five of our members.

Nine societies show no change in membership; twenty-four societies, a gain; and thirty, a loss. Our total membership remains stationary, with fluctuations in component society membership which in each instance reflects the administrative attitude of the county secretary. Many societies enroll 95 to 100 per cent. of eligible physicians; others, as low as 60 per cent.

MEDICAL DEFENSE

Applications for defense against suits for alleged malpractice since September 1, 1921, total nine, numbering from Case No. 147 to Case No.155.

Case No. 147. Application dated February 18, 1922. Diagnosis—Sciatic rheumatism. Alleged correct diagnosis hip dislocation. Summons served January 12, 1922. Appearance entered in court.

Case No. 148. Application dated March 16, 1922. Comminuted fracture both bones right lower leg. Alleged faulty reduction. Summons served March 8, 1922. Appearance entered in court.

Case No. 149. Application dated February 24, 1922. Diagnosis—Raynaud's disease. Alleges gangrene due to treatment. Summons served January 20, 1922. Appearance entered in court.

Case No. 150. Application dated April 4, 1922. Diagnosis—Cholecystitis, lobar pneumonia and empyema, one week following normal labor. Alleges complications due to neglect. Summons served March 22, 1922. Appearance entered in court.

Case No. 151. Application dated May 12, 1922. Diagnosis—Ununited displaced fracture of radius. Bone graft made. Patient two weeks later left his bed with resultant fracture of tibia where graft was removed.

Case No. 152. Application dated June 17, 1922. Diagnosis—Tonsillitis. Alleged nephritis developing subsequently was due to failure to use diphtheria antitoxin. Summons not yet served.

Case No. 153. Application dated July 3, 1922. Tonsillectomy, adenoidectomy and excision of uvula, followed by an attack of bronchitis. Alleges inability to follow his occupation as cornetist. Summons served June 12, 1922. Appearance entered in court.

Case No. 154. Application dated June 1, 1922. Alleged infection due to use of needle in course of hypodermatic medication. Summons not yet served.

Case No. 155. Application dated July 14, 1922. Diagnosis—Simple fracture right radius. Alleges improper reduction. Summons served June 30. Appearance entered in court.

The following cases have been closed during the past year:

Case No. 122. Judgment of *non pros* against the plaintiff.

Case No. 137. Jury disagreed.

Case No. 142. Charges withdrawn.

Applications were received from two members threatened with suit for slander, based on alleged remarks concerning patient's condition or etiology of same. The Committee of Counsel, supported by action of the Board of Trustees, refused assistance from the Medical Defense Fund.

We have actually expended $310.00 in the defense of our members, in contrast with $150.00 in 1921, and $4,209.00 in 1920.

Public health legislation has since our last meeting furnished a topic for discussion and action that has to a marked degree amalgamated and strengthened our organization. Such results are best achieved by calling on our members for individual contributions of money and educational influence, and in this instance the response has again reflected faithfully the efforts of local society officers to coöperate with the Medical Legislative Conference.

Postgraduate study plans have been developed by your Board of Trustees to the point where fruition depends solely upon your approval and subsequent coöperation between member groups and the Postgraduate Medical School of the University of Pennsylvania. These plans, as per instructions of the 1921 House of Delegates, will be presented at your Scranton session. Apparently our members are anxious for University extension work, and the need for same is manifest.

If we are to continue our development as an unselfish guild, we must serve, as always, our fellow members and the commonwealth. We must become more and more disseminators of knowledge in the prevention of sickness. Adjustment to changing conditions is the keynote to our continued success; therefore, we as individual members must realize our larger community responsibilities and remain confident that notwithstanding the present spirit of uncertainty, we shall not be deprived of any rights, privileges or emoluments unless we prove unworthy.

Our society must at once become more active in its efforts to overcome public indifference to the necessity for adequate training and regulation of all individuals who would treat the sick. Let this, the parent society, through appropriate channels unceasingly stimulate to action its component county societies, so that through us in time the prevention or the early recognition of disease may displace in the public mind the present rather silly emphasis given to quackery. Publicity sustains quackery, and through publicity the ultimate triumph of true medical science may be hastened.

Your Board of Trustees met four times in Harrisburg since our 1921 session and the three standing committees of the board have splendidly supervised the various administrative offices of the Society and the work of your standing committees.

In closing we wish to express our appreciation of the coöperation received from the officers of this society and its component societies, and to urge upon all such officers an increase of interest in the future development of our organization.

Respectfully submitted,

Walter F. Donaldson, Secretary.

REPORT OF THE EXECUTIVE SECRETARY

To the Board of Trustees:

Another twelve months have passed into history and it is our privilege to record the work accomplished through the office of the Executive Secretary during that time.

In order that the members of the Society may understand the conditions under which visits have been made to the county societies of the state it might be well to repeat the statement that such visits are made under the direction of the councilor of each district. An account of the meetings attended has appeared in the monthly county society reports.

The first meeting attended during the year was held at Johnstown, Cambria County, in October, and no further invitations were received until February 7th, when we visited Erie County. On the 9th of February we attended a very enjoyable meeting at Sharon, Mercer County, and on March 8th a meeting was held at Media, Chester County, at which a member of the Senate was present, affording an opportunity to discuss medical legislation. On March 21st one of the best meetings which it has been our privilege to attend took place in Pittsburgh, and on the 20th of April a splendid meeting of the Fourth Censorial District was held at Reading, Berks County, at which time we outlined legislative problems and urged a thorough study of the One Board Bill which is now being discussed throughout the state in anticipation of the coming session of the legislature. On the 26th of the same month we were present at a meeting of the Philadelphia County Society, where the work of the State Society and of the Medical Legislative Conference was discussed. The next program in which we took part was presented at Williamsport, Lycoming County. This meeting was well attended and much interest was shown in legislative affairs. On June 13th there was an all-day session of the Seventeenth Censorial District, which afforded an opportunity to discuss the relationship between the members of county societies and the work of the state organization. On the occasion of the Seventh Censorial District meeting, held in Huntingdon County on June 22d, another day full of interest to medical men was spent, and on June 27th the Twelfth Censorial District held its first meeting in many years at Smethport, McKean County. For a district so largely rural, where transportation is difficult, it was indeed a splendid meeting and a delightful occasion.

The impression of your Executive Secretary, gathered from attendance at these meetings, is that there is an increased interest, not only in scientific medicine, but also in the economic advancement of the profession. It is, therefore, encouraging to note that the activity of the Board of Trustees in developing the work under the Executive Secretary is not without results, and we are sure that as time goes on this development will place Pennsylvania and its state organization in the front ranks of the state societies of the Union.

A word as to coming legislation: As a rule, on the even years no activities in preparation for the legislative session of the odd years have been undertaken. In direct contrast this year the Medical Legislative Conference began early to develop its plans and, in the words of the politician, "to build its fences" for the session of 1923. Every member of the county societies received a circular outlining the legislative measures that are opposed and that should be opposed by the medical men and women of this state, as well as suggesting measures which will be advocated during the coming session. The most important constructive activity has been centered around the draft of the One Board Bill, which has been printed and copies of which have been furnished every county society for study and discussion.

From every part of the country there seems to be a growing demand that all who practice any form of the healing art shall be licensed by one board, which shall prescribe the preliminary and premedical qualifications for all branches. It is our hope that the active, aggressive members of our Society will thoroughly investigate the conditions in Pennsylvania and so study the draft of this tentative One Board Bill that they will be impelled to use their influence with legislators to bring about the passage of such a measure. It is a very evident fact that we are getting nowhere in the prosecution of illegal practitioners under the present conditions and with the various laws which are on the statute books of Pennsylvania. It is high time that the practitioner of medicine should cease to be alone held responsible for the prosecution of those whose activities cannot be classed under the term "practice of medicine."

This office has spent an immense amount of time and energy in an endeavor to obtain a register of all the practitioners of the healing art in the state. At the present time we have a record of 35 counties, and it is of importance that some place in this state such a directory should exist.

During the past year the office has also acted as intermediary between physicians who desired locations and localities which were in need of physicians. This is an important work, more especially in view of the scarcity of rural practitioners, and it is desirable that more effective measures be adopted for advertising the availability of this service throughout the state.

REPORT OF THE EDITOR

The second year of the publication of the Pennsylvania Medical Journal under the direction of the Committe on Publication of the Board of Trustees comes to an end with this issue (September). It is difficult for the Editor to estimate the value of a state medical society publication such as this, for so seldom does he hear any expression of the opinions of its readers or suggestions for improvement, which would be of value were they conveyed to the Committee on Publication. We believe, however, that in addition to the publication of the papers read at the annual session, the editorials, the original articles, the abstracts and other contributions are as good as find expression in any journal of this kind. We are not satisfied, however, to let well enough alone but seek better things for the volume of the year to come.

A diligent effort has been made to increase the advertising department and the Editor and his staff have let no opportunity pass to secure additional advertisers of a desirable type. We have been gratified to find increasing numbers of the members coöperating with us in this effort, and believe that the coming year will mark continued progress.

Following is a statement of receipts and remittances for the Journal from August 23, 1921, to August 15, 1922:

Receipts

Advertising	$7,260.16
Subscriptions	130.17
Journals sold	38.02
Authors' payments for cuts	82.73
Miscellaneous	31.45
Total	$7,542.53

Remittances

Remitted to treasurer	$7,520.68
Stamps	20.35
Miscellaneous	1.50
Total	$7,542.53

Petty Cash Account

1921		
Aug. 23.	Balance on hand	$278.31
1922		
Mar. 23.	Received from secretary	300.00
	Total	$578.31
Aug. 23, 1921 to Aug. 15, 1922,	Disbursed	$370.56
Aug. 15, 1922.	Balance on hand	207.75
	Total	$578.31

REPORT OF THE MANAGER OF SESSIONS AND EXHIBITS

At the Philadelphia Session 83 spaces were sold, total receipts from which amounted to $5,314.50. Out of this sum the manager paid expenses amounting to $183.63, remitting to the treasurer $5,130.87. The remaining expenses, which amounted to about $5,000.00, were paid by the treasurer out of the general fund.

Arrangements for the Scranton Session have been practically completed. The 13th Regiment Armory has been engaged for the sessions and all meetings will be held under its roof. Nearly all of the exhibit spaces have been disposed of at this writing, and it is hoped that the very attractive array of exhibits will be well attended. The reporters who come to us for this session are well recommended. Lanterns to illustrate a number of papers will be provided. A pleasing orchestra and competent caterer for the President's reception will be on hand and everything points towards a splendid meeting. Respectfully submitted,

Frederick L. Van Sickle,
Executive Secretary.

REPORT OF THE TREASURER, DR. J. B. LOWMAN

Receipts

1921	
Sept. 1, to cash, balance on hand	$18,243.75
Sept 30. to cash received for account of Executive Secretary and Editor	364.57
Oct. 19, to cash received for account of Executive Secretary and Editor	541.89
Oct. 19. to cash received from Dr. W. F. Donaldson, Membership Dues	162.50
Nov. 5, to cash received for account of Executive Secretary and Editor	263.79
Nov. 15, to cash received from Dr. W. F. Donaldson, Membership Dues	125.00
Nov. 18. to cash received from Dr. F. L. VanSickle, for account of Sessions and Exhibits	5,130.87
Nov. 18, to cash received for account of Executive Secretary and Editor	342.89
Nov. 30, to cash received for account of Executive Secretary and Editor	203.02
Dec. 3, to cash received from Dr. W. F. Donaldson, Membership Dues	240.00
Dec. 20, to cash received for account of Executive Secretary and Editor	555.10
Dec. 31, to cash received for account of Executive Secretary and Editor	313.48
1922	
Jan. 3, to cash received from Dr. W. F. Donaldson, Membership Dues	540.00
Jan. 3, to cash received from Dr. W. F. Donaldson, Membership Dues	32.50
Jan. 20. to cash received from Dr. W. F. Donaldson, Membership Dues	1,720.00
Jan. 20. to cash received for account of Executive Secretary and Editor	441.32
Jan. 31, to cash received from Dr. W. F. Donaldson, Membership Dues	$2,315.00
Feb. 7, to cash received for account of Executive Secretary and Editor	250.93
Feb. 20, to cash received for account of Executive Secretary and Editor	228.07
Feb. 20, to cash received from Dr. W. F. Donaldson, Membership Dues	5,110.00
Mar. 3. to cash received from Dr. W. F. Donaldson, Membership Dues	2,280.00
Mar. 3, to cash received for account of Executive Secretary and Editor	521.53
Mar. 17. to cash received from Dr. W. F. Donaldson, Membership Dues	10,540.00
Mar. 23, to cash received for account of Executive Secretary and Editor	398.06
Apr. 3. to cash received from Dr. W. F. Donaldson, Membership Dues	5,745.00
Apr. 7, to cash received for account of Executive Secretary and Editor	276.59
Apr. 20, to cash received from Dr. W. F. Donaldson, Membership Dues	5,465.00
May 2. to cash received for account of Executive Secretary and Editor	305.53
May 2, to cash received for account of Executive Secretary and Editor	242.08
May 2. to cash received from Dr. W. F. Donaldson, Membership Dues	485.00
May 25. to cash received from Dr. W. F. Donaldson, Membership Dues	810.00
May 25, to cash received for account of Executive Secretary and Editor	688.06
June 5, to cash received for account of Executive Secretary and Editor	41.42
June 5. to cash received from Dr. W. F. Donaldson, Membership Dues	325.00
June 25. to cash received from Dr. W. F. Donaldson, Membership Dues	110.00
July 15. to cash received from Dr. W. F. Donaldson, Membership Dues	325.00
July 15. to cash received for account of Executive Secretary and Editor	449.36
July 18. to cash received for account of Executive Secretary and Editor	412.85
Aug. 1. to cash received for account of Executive Secretary and Editor	314.07
Aug. 5. to cash received from Dr. W. F. Donaldson, Membership Dues	52.50
Aug. 16, to cash received for account of Executive Secretary and Editor	366.07
Aug. 19. to cash received from Dr. W. F. Donaldson, Membership Dues	25.00
Aug. 31. to cash received from Medical Benevolence Fund in payment of Vouchers Nos. 34 and 129, drawn from General Fund	349.82
Aug. 31. to cash received from Medical Defense Fund in payment of Vouchers Nos. 62, 67, 117. 130, 162, and 166, drawn from the General Fund	661.52
Total receipts, General Fund	$68,314.14

Expenditures

Order No.		
	1921	
1.	Oct. 13, by cash, Miller Bros. & Co., Rent, Harrisburg Office	$70.00
2.	Oct. 13. by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
3.	Oct. 13, by cash, Louis Weber & Son, Gavel for President	20.00
4.	Oct. 13, by cash, Ira G. Shoemaker, Expense as Trustee	24.64
5.	Oct. 13, by cash, George B. Jobson, Expense, Committee on Eye, Ear, etc.	67.82
6.	Oct. 13, by cash, American Surety Co., Premium on Bond of Secretary	12.50
7.	Oct. 21, by cash, Henry D. Jump, Traveling Expense as President	23.61
8.	Oct. 21, by cash, A. G. Trimhle, Buttons and Pennants, Philadelphia Meeting	78.63
9.	Oct. 21, by cash, Harry C. Solomon, Expense, Scientific Work Committee	40.00
10.	Oct. 21, by cash, John T. Newell, Printing, Board of Trustees	24.35
11.	Oct. 21, by cash, Bellevue-Stratford Hotel, Secretaries' Conference	60.50
12.	Oct. 21, by cash, Margaret M. Miller, Stenographer to Executive Secretary	100.00
13.	Oct. 21. by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
14.	Oct. 21, by cash, American Surety Company, Premium on Bond of Treasurer	37.50
15.	Oct. 21, by cash, Margaret Harrington, Stenographer to Secretary	80.00
16.	Oct. 21, by cash, Mary S. Blair, Expense, Philadelphia Meeting	40.67
17.	Oct. 21, by cash, Ida L. Little, Expense, Philadelphia Meeting	60.09
18.	Oct. 21. by cash, W. F. Donaldson, Expense, Philadelphia Meeting	50.00
19.	Oct. 21, by cash, W. F. Donaldson, Expense, Secretary's Office	26.15

20. Oct. 26, by cash, F. L. VanSickle, Expense, Philadelphia Meeting	$110.39
21. Oct 21, by cash, W. F. Donaldson, Expense, Philadelphia Meeting	32.02
22. Oct. 26, by cash, J. B. Lowman, Building & Loan Investment	100.00
23. Oct. 26, by cash, E. P. Joslin, M.D., Expense, Philadelphia Meeting	55.13
24. Oct. 26, by cash, Bellevue-Stratford Hotel, Rental of First Floor, Philadelphia Meeting	2,000.00
25. Oct. 26, by cash, Bellevue-Stratford Hotel, Expense, Philadelphia Meeting	91.00
26. Oct. 26, by cash, George E. Fern, Expense, Philadelphia Meeting	850.00
27. Oct. 26, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
28. Oct. 26, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
29. Oct. 26, by cash, Evangelical Press, Journal for September	157.78
Oct. 26, by cash, Evangelical Press, Programs, Philadelphia Meeting	254.65
30. Oct. 26, by cash, Meyer-Davis Music, Expense, Philadelphia Meeting	145.00
31. Oct. 26, by cash, C. T. Milligan, Expense, Philadelphia Meeting	60.00
32. Oct. 26, by cash, Dr. J. R. MacLeod, Expense, Philadelphia Meeting	51.00
33. Oct. 26, by cash, William Whitford, expense, Philadelphia Meeting	220.17
34. Oct. 26, by cash, E. B. Heckel, Interest on Benevolence Fund	218.00
35. Nov. 1, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
36. Nov. 8, by cash, John Lovett Morse, Expense, Pediatric Section	36.90
37. Nov. 15, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
38. Nov. 15, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
39. Nov. 15, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
40. Nov. 15, by cash, Miller Brothers & Co., Rent, Harrisburg Office	70.00
41. Nov. 15, by cash, Margaret Harrington, Stenographer to Secretary	80.00
42. Nov. 15, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
43. Nov. 15, by cash, William H. Martin, Expense, Philadelphia Meeting	120.00
44. Nov. 15, by cash, J. B. Lowman, Building & Loan Investment	100.00
45. Nov. 15, by cash, John Gwyer Press, Printing	78.00
46. Nov. 15, by cash, Evangelical Press, Journal for October	1,486.69
47. Nov. 18, by cash, George W. Crile, Expense, Annual Meeting	73.43
48. Nov. 18, by cash, M. S. Henderson, Expense, Annual Meeting	80.00
49. Nov. 30, by cash, John L. Pomering, Triplicate Receipt Books	85.00
50. Nov. 30, by cash, F. E. Dillan, Reporting, Annual Meeting	143.85
51. Dec. 9, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
52. Dec. 9, by cash, Mary S. Blair, Stenographer, Executive Secretary	150.00
53. Dec. 9, by cash, Hyacinth Beard, Stenographer, Executive Secretary	100.00
54. Dec. 9, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
55. Dec. 9, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
56. Dec. 9, by cash, Margaret Harrington, Stenographer to Secretary	80.00
57. Dec. 9, by cash, W. F. Donaldson, Salary for Quarter as Secretary	375.00
58. Dec. 9, by cash, Ida L. Little, Stenographer to Secretary	75.00
59. Dec. 9, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
60. Dec. 9, by cash, J. B. Lowman, Building & Loan Investment	100.00
61. Dec. 9, by cash, B. J. Myers, Quarterly Salary as Legal Counselor	75.00
62. Dec. 9, by cash, C. E. Murrin, Medical Defense Fund	25.00
63. Dec. 12, by cash, Evangelical Press, Journal for November	1,500.49
64. Dec. 16, by cash, Mary G. Lynch, Reporting Philadelphia Meeting	78.50
65. Dec. 16, by cash, Lulu Gay, Reporting Philadelphia Meeting	125.00
66. Dec. 16, by cash, Mrs. M. C. Repp, Reporting Philadelphia Meeting	125.00
67. Jan. 3, by cash, B. J. Myers, Special Legal Service	351.52
68. Jan. 3, by cash, E. S. Joseph, Insurance on Equipment	9.24
69. Jan. 3, by cash, H. W. Mitchell, Expense, Board of Trustees	29.52
70. Jan. 3, by cash, W. S. Brenholtz, Expense, Trustee and Councilor	18.67
71. Jan. 13, by cash, W. F. Donaldson, Expense, Secretary's Office	22.77
72. Jan. 13, by cash, Evangelical Press, Journal for December	$1,528.33
73. Jan. 13, by cash, John L. Pomering, Printing, Secretary's Office	36.50
74. Jan. 20, by cash, U. S. Nat'l Bank, Rent of Safe Deposit Box	3.00
75. Jan. 20, by cash, John Gwyer Press, Printing, Committee on Scientific Work	17.75
76. Jan. 20, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
77. Jan. 20, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
78. Jan. 20, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
79. Jan. 20, by cash, Miller Brothers & Co., Rent, Harrisburg Office	70.00
80. Jan. 20, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
81. Jan. 20, by cash, Margaret Harrington, Stenographer, Secretary's Office	80.00
82. Jan. 20, by cash, J. B. Lowman, Building & Loan Investment	100.00
83. Jan. 20, by cash, John D. Heard, Expense, Committee on Medical Research	25.00
84. Jan. 20, by cash, Office Equipment Co., Office Equipment, Executive Secretary	113.53
85. Feb. 16, by cash, Dives, Pomeroy & Stewart, Equipment, Office of Executive Secretary	20.00
86. Feb. 16, by cash, Evangelical Press, Journal for January	1,443.76
87. Feb. 16, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
88. Feb. 16, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
89. Feb. 16, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
90. Feb. 16, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
91. Feb. 16, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
92. Feb. 16, by cash, Margaret Harrington, Stenographer to Secretary	80.00
93. Feb. 16, by cash, J. B. Lowman, Building & Loan Investment	100.00
94. Feb. 16, by cash, Penna. State Chamber of Commerce, Annual Dues	25.00
95. Feb. 16, by cash, H. W. Mitchell, Expense as Trustee	27.34
96. Feb. 16, by cash, John L. Pomering, Committee on Community Needs, Printing	4.50
97. Mar. 3, by cash State Workmen's Insurance Fund, Expense, Executive Secretary	4.60
98. Mar. 3, by cash, H. T. Price, Expense, Scientific Program Committee	22.66
99. Mar. 17, by cash, Lawrence Litchfield, Expense, Board of Trustees Meeting	53.56
100. Mar. 17, by cash, Evangelical Press, Journal for February	1,412.20
101. Mar. 17, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
102. Mar. 17, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
103. Mar. 17, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
104. Mar. 17, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
105. Mar. 17, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
106. Mar. 17, by cash, J. B. Lowman, Building & Loan Investment	100.00
107. Mar. 17, by cash, B. J. Myers, Quarterly Salary as Legal Councilor	75.00
108. Mar. 17, by cash, W. F. Donaldson, Quarterly Salary as Secretary	375.00
109. Mar. 17, by cash, Ida L. Little, Stenographer to Secretary	75.00
110. Mar. 17, by cash, Margaret Harrington, Stenographer to Secretary	80.00
111. Mar. 17, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
112. Mar. 17, by cash, W. F. Donaldson, Office Expenses as Secretary	22.84
113. Mar. 17, by cash, J. H. Rittenhouse Co., Expense, 1922 Meeting	57.50
114. Mar. 23, by cash, F. L. VanSickle, Expense, 1922 Meeting	150.00
115. Mar. 23, by cash, F. L. VanSickle, Office Expense, Executive Secretary	300.00
116. Mar. 23, by cash, American Surety Co., Premium on Bond of Executive Secretary	6.25
117. Mar. 23, by cash, John G. Ruth, Medical Defense Fund	85.00
118. Mar. 23, by cash, F. L. VanSickle, Expense, Committee on Archives	6.42
119. Mar. 23, by cash, H. W. Mitchell, Expense as Councilor	43.81
120. Apr. 6, by cash, Cotterel-Ebner Co., Office Equipment, Executive Secretary	51.85
121. Apr. 6, by cash, Evangelical Press, Journal for March	1,338.04
122. Apr. 20, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
123. Apr. 20, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00

124. Apr. 20, by cash, Hyacinth Beard, Stenographer to Executive Secretary	$100.00
125. Apr. 20, by cash, Miller Bros. & Co., Rent, Executive Secretary's Office	70.00
126. Apr. 20, by cash, Margaret Harrington, Stenographer to Secretary	80.00
127. Apr. 20, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
128. Apr. 20, by cash, J. B. Lowman, Building & Loan Investment	100.00
129. Apr. 20, by cash, E. B. Heckel, Interest on Benevolence Fund	131.82
130. May 2, by cash, W. A. Challener, Medical Defense Fund	25.00
131. May 2, by cash, C. L. Stevens, Expense, Committee on Archives	2.40
132. May 2, by cash, Evangelical Press, Journal for April	1,359.52
133. May 17, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
134. May 17, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
135. May 17, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
136. May 17, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
137. May 17, by cash, Margaret Harrington, Stenographer to Secretary	80.00
138. May 17, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
139. May 17, by cash, F. L. VanSickle, Expense, as Executive Secretary	57.93
140. May 17, by cash, Evangelical Press, Committee on Archives	45.15
141. May 17, by cash, A. C. Wood, Expense, Committee on Scientific Work	25.09
142. May 17, by cash, H. W. Mitchell, Expense, Board of Trustees	27.34
143. May 23, by cash, J. B. F. Wyant, Expense, Board of Trustees	107.72
144. May 23, by cash, Evangelical Press, Journal for May,	1,304.53
145. May 23, by cash, F. H. Gerlock & Co., Expense, Committee on Public Health and Education	23.00
146. May 26, by cash, J. B. Lowman, Building & Loan Investment	100.00
147. May 26, by cash, Harnies and Salsbury, Workmen's Compensation Insurance	10.00
148. June 13, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
149. June 13, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
150. June 13, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
151. June 13, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
152. June 13, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
153. June 13, by cash, Margaret Harrington, Stenographer to Secretary	80.00
154. June 13, by cash, W. F. Donaldson, Quarterly Salary as Secretary	375.00
155. June 13, by cash, W. F. Donaldson, Office Expense, as Secretary	57.03
156. June 13, by cash, Ida L. Little, Stenographer to Secretary	75.00
157. June 13, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
158. June 13, by cash, J. B. Lowman, Building and Loan Investment	100.00
159. June 13, by cash, B. J. Myers, Quarterly Salary as Legal Councilor	75.00
160. June 13, by cash, Evangelical Press, Expense, Executive Secretary	47.50
161. June 13, by cash, H. T. Price, Expense, Scientific Program Committee	23.44
162. June 13. by cash, William A. McConnell, Medical Defense Fund	125.00
163. July 15, by cash, Adam J. Simpson, Expense, Scientific Program Committee	28.00
164. July 15, by cash, Thos. G. Simonton, Expense, Scientific Program Committee	52.00
165. July 15, by cash, E. J. G. Beardsley, Expense, Scientific Program Committee	26.50
166. July 15, by cash, Wm. A. Challener, Medical Defense Fund	50.00
167. July 15, by cash, Evangelical Press, Journal for June	1,367.55
168. July 15, by cash, W. S. Brenholtz, Expense, Board of Trustees	34.94
169. July 15, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
170. July 15, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
171. July 15, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
172. July 15, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
173. July 15, by cash, Margaret Harrington, Stenographer to Secretary	80.00
174. July 15, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
175. July 15, by cash, J. B. Lowman, Building & Loan Investment	$100.00
176. July 15, by cash, Cotterel-Ebner Co., Expense, Committee on Archives	28.90
177. July 15, by cash, E. A. Shumway, Refund from Medical Defense Allotment, Philadelphia Society	492.50
178. Aug. 7, by cash, F. L. VanSickle, Salary as Executive Secretary	375.00
179, Aug. 7, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
180. Aug. 7, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
181. Aug. 7, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
182. Aug. 7, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
183. Aug. 7, by cash, Margaret Harrington, Stenographer to Secretary	80.00
184. Aug. 7, by cash, J. B. Lowman, Building & Loan Investment	100.00
185. Aug. 7, by cash, Evangelical Press, Expense, Committee on Archives	21.00
186. Aug. 7, by cash, H. W. Mitchell, Expense, Board of Trustees	27.34
187. Aug. 7, by cash, Lawrence Litchfield, Expense as President	59.23
188. Aug. 7, by cash, I. J. Moyer, Expense, Board of Trustees	94.60
189. Aug. 7, by cash, F. H. Gerlock & Co., Printing, Committee on Cancer	12.10
190, Aug. 12, by cash, Evangelical Press, Journal for July,	2,008.51
191. Aug. 12, by cash, George M. Dorrance, Expense, Section of Surgery	22.90
192. Aug. 19, by cash, Walter S. Brenholtz, Expense, Board of Trustees	9.97
193. Aug. 19, by cash, Ira G. Shoemaker, Expense as Councilor	35.05
194. Aug. 28, by cash, Evangelical Press, Journal for August	1,348.62
195. Aug. 28, by cash, F. L. VanSickle, Salary as Executive Secretary	385.00
196. Aug. 28, by cash, Mary S. Blair, Stenographer to Executive Secretary	150.00
197. Aug. 28, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
198. Aug. 28, by cash, Evangelical Press, Journal for September (estimated)	1,450.00
199. Aug. 28, by cash, Margaret Harrington, Stenographer to Secretary	80.00
200. Aug. 28, by cash, W. F. Donaldson, Quarterly Salary as Secretary	375.00
201. Aug. 28, by cash, Ida L. Little, Stenographer to Secretary	75.00
202. Aug. 28, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
203. Aug. 28, by cash, B. J. Myers, Quarterly Salary as Legal Councilor	75.00
204. Aug. 28, by cash, J. B. Lowman, Building & Loan Investment	100.00
205. Aug. 28, by cash, W. F. Donaldson, Office Expense as Secretary	34.63
206. Aug. 28, by cash, F. G. Hartman, Expense as President	18.20
207. Aug. 28, by cash, Evangelical Press, Reprints of Membership List	20.50
208. Aug. 28, by cash, A. G. Trimble, Buttons and Badges for Annual Meeting	33.50
209. Aug. 28, by cash, J. B. Lowman, for Medical Defense Fund for Investment	5,458.51
210. Aug. 28, by cash, J. B. Lowman, for Medical Benevolence Fund for Investment	1,091.71
Total Expenditures, General Fund	$46,359.85

CLASSIFIED STATEMENT OF RECEIPTS

September 1, 1921, to September 1, 1922

GENERAL FUND

Cash on hand September 1, 1921		$18,243.75
Received from Dr. W. F. Donaldson, for membership per capita tax	$36,407.50	
Received from Dr. F. L. VanSickle, for Account of Sessions and Exhibits	5,130.87	
Received from Dr. F. L. VanSickle, for Account of Executive Secretary and Editor	7,520.68	
Received from Medical Benevolence Fund in payment of orders issued against said fund	349.82	
Received from Medical Defense Fund in payment of orders issued against said fund	661.52	50,070.39
Total		$68,314.14

MEDICAL DEFENSE FUND

Cash on hand September 1, 1921		$12,354.86
Received from interest on investment	$262.50	
Received from interest on deposit	374.16	
Received from allotments from membership per capita tax	5,458.51	6,095.17
Total		$18,450.03

MEDICAL BENEVOLENCE FUND

Cash on hand September 1, 1921		$2,849.35
Received from interest on investment	$436.00	
Received from interest on deposit	96.98	
Received from allotment from membership per capita tax	1,091.71	1,624.69
Total		$4,474.04

ENDOWMENT FUND

Cash on hand September 1, 1921		$873.36
Received from interest on investment	$106.25	
Received from interest on deposit	30.82	137.07
Total		$1,010.43

SUMMARY

General Fund	$68,314.14	
Medical Defense Fund	18,450.03	
Medical Benevolence Fund	4,474.04	
Endowment Fund	1,010.43	
Total Receipts		$92,248.64

CLASSIFIED STATEMENT OF EXPENDITURES

September 1, 1921, to September 1, 1922

GENERAL FUND

Medical Defense Fund for investment	$5,458.51	
Medical Benevolence Fund for investment	1,091.71	
Endowment Fund, investment	1,200.00	
Journal for year	17,706.02	
Salaries:		
Executive Secretary and Editor	4,500.00	
Secretary	1,500.00	
Treasurer	200.00	
Legal Councilor	300.00	
Stenographers:		
Secretary's Office	1,260.00	
Executive Secretary's Office	3,000.00	
Expense, Gavel for President	20.00	
Expense, Premiums on bonds of Treasurer, Secretary and Executive Secretary	56.25	
Expense, Annual Meeting, 1921	4,941.93	
Expense, Annual Meeting, 1922	241.00	
Expense, Printing and Stationery	$183.50	
Expense, Rental of Safe Deposit Box	3.00	
Expense, Annual Dues, Chamber of Commerce	25.00	
Expense, Refund on Medical Defense Allotment	492.50	
Expense, Secretary's Office, for rent, supplies, etc.	559.92	
Expense, Executive Secretary's Office, for rent, supplies, equipment, etc.	1,454.65	
Expense, for traveling, etc., for President	101.04	
Expense of Committees, Councilors and Trustees	1,053.48	
Expended on behalf of special funds (reimbursed at end of fiscal year)	1,011.34	
Total		$46,359.85

SPECIAL FUNDS

(Expenditure listed under General Fund)		
Total Disbursements		$46,359.85

STATEMENT OF CASH BALANCES AND INVESTMENTS

September 1, 1922

CASH

General Fund	$21,954.29	
Medical Defense Fund	17,788.51	
Medical Benevolence Fund	4.124.22	
Endowment Fund	1,010.43	
		$44,877.45

MEDICAL DEFENSE FUND

Wilkes-Barre City Improvement Bonds, Nos. 96, 97 and 98, Series 1, par value $1,000.00, 4½ per cent.	$3,000.00	
Liberty Bonds	3,000.00	
		$6,000.00

MEDICAL BENEVOLENCE FUND

Wilkes-Barre City Improvement Bond, No. 94, Series 1, Par Value $1,000.00, 4½ per cent.	$1,000.00	
Liberty Bonds	9,200.00	
		$10,200.00

ENDOWMENT FUND

100 Shares Peoples' Building & Loan Association, 69 installments paid	$6,900.00	
Liberty Bonds	5,000.00	
		$11,900.00
Total cash balances and investments, September 1, 1922		$72,977.45

SUMMARY STATEMENT OF CASH BALANCES, RECEIPTS AND EXPENDITURES

September 1, 1921, to September 1, 1922

	Total	General Fund	Medical Defense Fund	Medical Benevolence Fund	Endowment Fund
Cash balance, Sept. 1, 1921	$34,321.32	$18,243.75	$12,354.86	$2,849.35	$873.36
Receipts:					
Membership per capita tax	36,407.50	36,407.50	....	....	....
Allotments from membership per capita tax	6,550.22	....	5,458.51	1,091.71	....
Account of Sessions and Exhibits	5,130.87	5,130.87	....	....	....
Account of Executive Secretary and Editor	7,520.68	7,520.68	....	....	....
Interest on investments and deposits	1,306.71	....	636.66	532.98	137.07
Total receipts, Sept. 1, 1921, to Sept. 1, 1922	56,915.98	49,059.05	6,095.17	1,624.67	137.07
Total receipts, including balances, Sept. 1, 1921	91,237.30	67,302.80	18,450.03	4,474.04	1,010.43
Transfers of Funds	....	**1,011.34	*661.52	*349.82	....
Total balances and receipts	91,237.30	68,314.14	17,788.51	4,124.22	1,010.43
Expenditures, Sept. 1, 1921, to Sept. 1, 1922	46,359.85	46,359.85	....	....	....
Balances, Sept. 1, 1922	44,877.45	21,954.29	17,788.51	4,124.22	1,010.43

*Transferred from.

**Transferred to

REPORT OF THE CHAIRMAN OF THE BOARD OF TRUSTEES

To the President and House of Delegates:

The Board of Trustees reorganized Thursday afternoon, October 6, 1921, by electing the undersigned Chairman, and Dr. Donald Guthrie, Clerk. The new Trustees, Drs. Harry W. Mitchell (reëlected) and Ira G. Shoemaker (reëlected) were present.

The chairman reappointed the various committees of the Board of Trustees, permitting the committees to choose their own chairman and secretary.

The report of the Committee on Finance containing the budget for the ensuing year, was adopted and approved.

At the meeting of the Board, December 12, 1921, in Harrisburg, a conference with the Chairman of the Committee on Public Health Legislation and Solicitor Myers resulted in a decision to have drafted for presentation to the 1923 Pennsylvania Legislature, a bill creating a single state board to take over the functions of the various boards licensing practitioners of the healing art which now operate under separate legislative enactments.

At the meeting of the Board in Harrisburg, February 1, 1922, we received the final report of the special committee on Curriculum for Nurses Training Schools, and appointed a committee of three to confer with the authorities of the Postgraduate School of Medicine of the University of Pennsylvania, regarding postgraduate work, as authorized by the 1921 House of Delegates.

At the May 2, 1922, meeting, we again conferred with the representative of the Medical Legislative Conference of Pennsylvania, and with Chairman Mayer of the House of Delegate's Committee on Revision of the Constitution and By-Laws. This Committee has worked faithfully and will present for your consideration some very excellent recommendations. The Committee had in mind only such changes as would effect better management and better results for the Society.

At the special meeting held July 6, 1922, after conference with Solicitor Myers and Chairman Mayer, we approved as presented, the draft of the so-called one board bill and made additional suggestions to the draft presented by the Committee on Revision of the Constitution and By-Laws. In each instance, the final action of your committees was favorably recommended by our Board.

With the above brief review and the assurance of our thorough satisfaction with the services rendered the Society during the past year by its various officers, it will be seen that faithful effort has been made to administer the affairs of our Society to the best interests of its members.

Our Society has before it two great problems, namely, how best to assist in the enactment and enforcement of proper laws controlling the licensing of all who enter any branch of the healing art, and the furtherance of a well-developed plan for postgraduate work. The illegal practitioners in the healing art are increasing rapidly and will soon be as the sands of the seashore.

After many years of experience, the undersigned still holds the opinion that the office of Councilor and Trustee is one of the most important in the scheme of our Society government. As Trustee, a member is in close year-round touch with all phases of the Society's functioning by means of meetings and quarterly reports presented by the Secretary, Treasurer and Executive Secretary, as well as of the three important standing committees of the Board. As Councilor, such a member has great opportunity to develop democracy in our organization by carrying to the component societies of his district, advice and suggestions founded on the experience above mentioned. The office, while one of great dignity, develops to its highest possibilities, in direct proportion to the general service and sacrifice rendered by the individual Trustee and Councilor. J. B. F. WYANT, *Chairman.*

REPORTS OF INDIVIDUAL COUNCILORS

DR. FRANK C. HAMMOND, PHILADELPHIA, COUNCILOR FOR THE FIRST COUNCILOR DISTRICT

To the President and House of Delegates:

Your Councilor desires to submit the following report for the First Councilor District. Matters medical and politic have been very active during the year now closing. Dr. William S. Wray was elected Secretary to fill the vacancy caused by the death of Dr. J. Morton Boice. During the spring, a dinner was given to Dr. George E. deSchweinitz in honor of his election as President-Elect of the American Medical Association. At the request of the guest of honor, all the speeches were devoted to some phase of medical education.

The various committees of the county medical society have been very active during the year along constructive work. Dr. Van Sickle was present at one of the meetings and gave a very instructive address.

The Committee on Medical Defense is continuing its very satisfactory work, having been successful in defending all the cases that required its attention during the year. There is a special Compensation Committee of the Board of Directors of the County Society working on the solution of some of the undesirable features of the Workmen's Compensation Act, and the rulings that have been given on the same. As a test case in one phase of the matter, the Chairman of the Committee has taken the case in question to the Common Pleas Court of this County. Same will possibly come to trial this fall.

The matter of attendance at the meetings of the County Society is giving great concern to the officers. Two scientific meetings are held monthly with the exception of July and August. The Board of Directors has been considering the advisability of changing the By-Laws, so that the scientific meetings will be held, say once a month at the Central Body, and one a month with the Branch Societies. The large amount of territory covered by Philadelphia, and the difficulty members in the outlying districts have in reaching the central meeting at a "decent" time, and the number of medical meetings that are held almost nightly all over the county, naturally detract from the attendance of the meeting of the central body. Some of the branch societies during the year have conducted popular as well as scientific programs of note.

During the winter the question arose in regard to admission to membership in the county society of members and faculty of medical schools, said members not having a degree in medicine. An application was made by one who is a professor of chemistry, in one of the medical schools in the county. He stated that in view of the fact that he occupied a chair in a medical school and his life's work was so intimately associated with the medical profession, he desired the opportunity to become a member of the county society, where he may participate in the discussions. The question was referred to the next meeting of the House of Delegates.

REPORT OF HARRY W. ALBERTSON, COUNCILOR FOR THE SECOND DISTRICT

To the President and House of Delegates:

From the standpoint of medical organization we consider the Second Councilor District in a very favorable condition.

I have attended meetings in nearly all the counties comprising this district during the past year and have noted with much pleasure the interest displayed by the fact of good attendance and a desire to learn more of the activities of the State Society concerning matters politic and economic by those present.

Regular and stated meetings are held by all the societies of the district and the attendance in all instances has been equal to or surpassing that of previous years.

No district censorial meetings have been held, but it is hoped that this may be accomplished in at least one of the districts before the end of the present year.

There have been no suits or threatened suits for malpractice reported to this office during the past year, which marks the third year of legal tranquility, which we think speaks louder than words for the degree of organized fellowship in the second district.

We hope the general interest of medical men in the welfare of their state organization may be maintained and we feel certain that a higher plane of standards will result and the profession and public be materially benefited thereby and in the future as in the past, the Second Councilor District stands ready and willing to foster the cause of better public health legislation and better doctors.

DR. IRA G. SHOEMAKER, READING, COUNCILOR FOR THE THIRD DISTRICT

To the President and House of Delegates:

The Councilor of the Third District is pleased to report that conditions are very good. There is a one hundred per cent paid membership and an increase of about twenty-five members. There is an apparent awakening of interest amongst the societies as evidenced by well attended meetings. The officers are "on the job" and are doing all possible to further the interests of their organizations.

The Schuylkill Society should receive especial mention. Last year there was a considerable loss in membership, the reason for which we were not able to learn, whether due to laxness on the part of the officers or indifference of the members, we are not able to say. In January, Dr. Fleming of Tamaqua was elected Secretary, and he, with the hearty coöperation of the other newly elected officers, threw his energy into the work with the result that they have a hundred per cent paid membership and an accession of new members which has offset the loss sustained last year.

We have had no application for medical defense and do not know of any threatened suit for alleged malpractice.

There were two censorial district meetings held. The second district meeting at Media, and the fourth district meeting at Reading. Both meetings were well attended, a spirit of good fellowship prevailed, and the interest manifested showed that the men are awake to the situation and are eager to be enlightened on the different problems confronting the profession. Senators McDade of Delaware County and Norton of Berks County were present, and in addressing the meetings demonstrated that they are conversant with many of the different phases of proposed medical legislation. They did not fail to impress upon their hearers the necessity for eternal vigilance, and suggested that it would be to the interest of the profession to keep in touch with every legislator and urge upon him our views.

A tricounty meeting of Chester, Delaware and Montgomery Counties was held at West Chester, which the Councilor attended by invitation. The meeting was large, of a social and scientific nature. It was a "great success" and enjoyed by all. We have always believed that meetings of this nature with neighboring societies could result only in good.

DR. THEODORE B. APPEL, LANCASTER, COUNCILOR FOR THE FOURTH DISTRICT

To the President and House of Delegates:

All the component county societies in the fourth district have been functioning normally during the past year. An interesting event in the history of the Lebanon County Society was a meeting held at Lebanon in the spring, in honor of the seventieth anniversary of Dr. William M. Guilford's graduation. The meeting was well attended, the Doctor was present in person, and entered into all the activities with great interest. Few men have as splendid a record of professional service as has Dr. Guilford.

During the year two requests have been received for medical defense from this district. One from Franklin County, No. 147, where suit had been entered for improper treatment of a hip joint condition, and one from Lancaster County, No. 152, where a suit savoring of blackmail had been threatened in a case of tonsilitis followed by nephritis. In the first case attorneys for the defense were employed but nothing has so far developed, and in the second case the suit has not as yet been brought and probably never will be. There are two other cases under observation in this district, both from Lancaster County. In the one, No. 69, in which an appeal for a second trial was taken, five years have elapsed and the case will probably never be revived. In the second case, No. 143, now of two years' standing, the defendant has moved from the county and the case will probably never appear.

The censorial meeting of the district containing Lancaster, Lebanon and Dauphin Counties was held on the 18th of August, at the Lancaster Country Club.

DR. HOWARD C. FRONTZ, HUNTINGDON, COUNCILOR FOR THE FIFTH DISTRICT

To the President and House of Delegates:

Herewith is presented the annual report of the Fifth Councilor District:

The component county societies have been active, and their meetings held regularly. The tendency is towards better scientific programs. When visiting the county societies, it has been our aim to point out the duty of each member regarding the need of helping to bring about proper legislation for protection to the health of the public and to those legally engaged in the practice of the healing art.

No suit for malpractice has been brought against any member of the district during the year. One member was threatened with suit in January, 1922, but thus far, it has not been brought. It is believed that nothing more will be heard of it.

Censorial meetings were held in both censorial districts. The sixteenth censorial meeting was held at Johnstown, October 13, 1921. This meeting was not as well attended as it should have been. The counties, other than Cambria, were not well represented, owing probably to the State meeting being held the week previous. Excellent addresses were given by Dr. R. R. Snowden, Pittsburgh; Dr. J. Moore Campbell, of the State Department of Health, and Dr. Frederick L. Van Sickle, Executive Secretary. The meeting was most interesting.

The seventh censorial meeting was held at the J. C. Blair Memorial Hospital, Huntingdon, on June 22, 1922. Clinics were held in the morning, and after lunch, interesting and instructive addresses were delivered by Dr. Lawrence Litchfield, President-Elect of the State Society; Dr. J. P. Crozier Griffith of Philadelphia, and Dr. Frederick L. Van Sickle, Executive Secretary. The attendance was large.

Two other important medical meetings in the councilor district are worthy of note.

The West Branch Medical Association met July 28th, at Nittany Club, Center County. We were favored with addresses by Dr. Barton Cooke Hirst of the University of Pennsylvania, and Dr. Donald Guthrie of Sayre. More than 140 physicians were present and all enjoyed the scientific program and the day's outing.

The annual medical meeting at Altoona, Blair County, will be held September 13, 1922, at which time physicians from twelve counties will assemble to hear addresses from two eminent physicians. This annual meeting, always one of the biggest and best that is held in Central Pennsylvania has been a factor in developing a better feeling among physicians and in increasing interest in scientific medicine.

DR. IRWIN J. MOYER, PITTSBURGH, COUNCILOR FOR THE SIXTH DISTRICT

To the President and House of Delegates:

The Councilor of the Sixth District begs leave to submit the following report:

The Washington County Medical Society was visited March 14, 1922. There was a good attendance and active interest is taken in medical matters. Dr. G. W. Smeltz presented the "Significance of Psychoneurosis as a Disease Entity."

The Greene County Medical Society meeting at Waynesburg on the evening of March 14, 1922, was well attended and a full discussion of problems confronting the medical profession followed.

An interesting and well attended meeting was held by the Fayette County Medical Society, May 5, 1922, at Uniontown. A very interesting paper read by Dr. F. T. Billings of Pittsburgh, on "Heart Block," was generally discussed. After this, some phases relating to the physical welfare of the public were presented and discussed. It is quite evident to the writer that the medical men of Fayette County are earnestly and diligently endeavoring to enlighten the public on health welfare problems.

The Somerset County Medical Society was visited May 16, 1922. There was a good attendance. The principal subjects discussed at the session were: "The Relation of the Medical Profession to the General Public;" "How May the Profession Become More Useful to the Public?" "The Necessity for Instruction in Order That the Public May Coöperate and Become More Active in Health Problems." The members of the Somerset County Medical Society are alert and are diligently endeavoring to do their share in this work.

A large proportion of the Westmoreland County Medical Society was present April 4, 1922, at Greensburg. A good scientific program was presented. Medical education was discussed and the society endorsed the one board bill. It favors the adoption of standard educational requirements for all who wish to practice the healing art. The Medical and Surgical Clinic held at Greensburg by the Westmoreland County Medical Society in coöperation with the University extension effort of the University of Pennsylvania, June 23, 1922, was a splendid affair. There was a large attendance with close attention and interest, which greatly aided the presentation of practical subjects in a clear and concise manner.

We have endeavored to stimulate activity among the members of our profession throughout the Sixth Councilor District, so that they may take an active part in public problems and endeavor to promote public interest in all health matters so that quackery may not flourish. One of the problems before us is to convince the public that the medical profession is working primarily to promote public health conditions for the general public and the elevation of the educational standard required of any one pretending to treat disturbed physical conditions.

DR. HARRY W. MITCHELL, WARREN, COUNCILOR FOR THE SEVENTH DISTRICT

To the President and House of Delegates:

The Councilor for the Seventh District has visited all the societies during the year.

Meetings throughout the district are generally well attended, medical interest being sustained in all the various society activities.

There have been no suits for malpractice instituted during the year. In Mercer County, there has been considerable interest in the attempt to secure legal decision on the rights of osteopaths and chiropractors to practice general medicine and surgery. Several cases have been brought before the local court and decisions rendered. One of the cases is still pending.

Two meetings were arranged, one at Erie, and the other at Mercer, for joint attendance of the societies comprising the censorial districts. President-Elect Litchfield and the Executive Secretary, Frederick L. Van Sickle, were in attendance at the meeting held at Mercer, while Dr. Van Sickle was present at the Eleventh Censorial District Meeting at Erie. Both meetings were fully attended. Matters pertaining to possible legislation for the coming year were thoroughly discussed and the measures planned were approved. At all the county society meetings of this district, the need of coöperation in legislative activities was brought to the attention of the members, who fully appreciated the necessity of showing more active interest in matters pertaining to public health and general welfare than has hitherto been displayed by the profession generally. Assurances of all necessary aid for supporting the activities of the medical legislative conference at the next legislature were obtained from the various societies.

DR. DONALD GUTHRIE, SAYRE, COUNCILOR FOR THE EIGHTH DISTRICT

To the President and House of Delegates:

The report of the Eighth Councilor District shows the condition of the component societies to be very good.

There have been no threatened suits for alleged malpractice and no internal disturbances which have required judicial council.

All the societies have been visited by the Councilor. At a tricounty meeting held in Smethport, composed of members from Elk, McKean and Potter Counties, your Councilor was represented by Councilor Albertson, who reported conditions in that district to be excellent.

DR. J. B. F. WYANT, KITTANNING, COUNCILOR FOR THE NINTH DISTRICT

To the President and House of Delegates:

The Councilor of the Ninth District presents his annual report with pleasure and considerable pride.

Official visits were made to Armstrong, Butler, Clarion and Venango Counties, and he hopes to visit Indiana and Jefferson Counties before the State Medical Society convenes at Scranton, in October. The counties of the district are free from any cases of alleged malpractice.

The attendance and interest in the meetings of the county medical meetings could be better, yet the main stand-bys are always on the floor. The societies have all contributed to the legislative fund. It was hoped that we might have an annual meeting of the censorial district and may have it yet. An effort has been put forth to enlist every eligible physician to become a member of his county society. The Councilor, as he reviews the work of the year just closing, is happy to state that there is a closer relationship in the ranks of the medical men than there was formerly.

DR. WALTER S. BRENHOLTZ, WILLIAMSPORT, COUNCILOR FOR THE TENTH DISTRICT

To the President and House of Delegates:

The report of the Councilor for the Tenth Councilor District for the year 1921 to 1922, is herewith submitted:

Official visits were made to all of the eight county societies of the district and upon every occasion we were very cordially received and royally entertained. The meetings were all well attended with one exception, the Snyder County Society. The stated programs of the meetings were very well rendered and all papers read were of a high type and showed that much thought and time had been spent in preparation. The interest manifested by the members in the local societies indicated that they are very much alive and active along all lines.

All of the societies hold monthly meetings except the Union County Society, which holds its meetings every three months.

There has been an increase in the membership of the district as a whole, although two of the societies show a decrease because of the fact that some of their members had not paid their 1922 dues.

There are very few eligible physicians in the tenth district that are not members of a county society. The Lycoming County Medical Society is the only society in the district that can boast of having every eligible physician of the county as a member, but an effort is being put forth in the other county societies so that by another year the Tenth Councilor District may be 100% strong as to members.

The members of all the societies of this district are taking an active interest in medical legislation and have agreed to do everything possible to aid in the passage of all legislation which will be for the best interest of the general public as well as of the medical profession. The members also will give the Medical Legislative Conference of Pennsylvania their moral as well as their financial support.

There is one threatened suit for alleged malpractice in this district, but nothing more than "a summons to appear" has been issued, and our attorneys are now waiting for further action, which may never occur.

A very largely attended and enthusiastic meeting of the Fifteenth Censorial District was held at Williamsport, May 15th. Clinics were held at the Williamsport Hospital during the morning, and at 12:30 lunch was served at Community House. The meeting was called to order at 1:30 p. m., and an organization effected. Dr. Frederick L. Van Sickle read a paper entitled "Are the Present Laws Relating to the Healing Art in Pennsylvania Adequate?" Dr. Frank G. Hartman, President of the State Society, addressed the meeting regarding "The Medical Society of the State of Pennsylvania." Both addresses were very fully discussed by the members and also by Assemblymen Charles F. Bidelspacher and W. Clyde Harer, who had been invited as guests.

The Eighteenth Censorial District will hold its annual meeting at Bloomsburg, Friday, September 8, 1922.

We have honestly endeavored to render every assistance possible to further the cause of a better organized medical profession, and to make good the motto of the Tenth Councilor District: "Peace and Good Will."

REPORTS OF COMMITTEES

COMMITTEE ON PUBLIC HEALTH LEGISLATION

To the President and House of Delegates:

The Committee on Public Health Legislation of the Society again united with the State Homeopathic Society and the Eclectic Society of Pennsylvania and formed the Medical Legislative Conference.

As the Legislature was not in session there was no work of importance at Harrisburg.

The most significant work was that of the organization of the profession for the nomination of candidates for the Legislature at the Primary Election. This necessitated the sending of thousands of letters. The profession was well circularized and was requested to interview all candidates.

The candidates for the Governorship and the General Assembly were advised of the stand which the doctors had taken in medical legislation and were requested to express their views upon the same. A number of very favorable replies were received.

The Conference compiled a proposed bill dealing with all branches of the healing art, which, if enacted, will take care of all cults now in existence as well as any which may, in the future, apply for a license to practice. This compilation was meant to be a starting point, the intention of which is to have all the professions concerned to meet in conference with this committee and formulate a bill satisfactory to all.

The next year will be one of extreme activity in legislative work at Harrisburg, and it is the desire of the Conference to have every member of the profession in the State on the alert while the Legislature is in session. Respectfully submitted,

G. A. Knowles, Chairman;
L. Webster Fox,
Joseph G. Steedle,
Summerfield J. Miller,
Edgar M. Green,
Frederick L. Van Sickle,
Walter F. Donaldson,
Frank G. Hartman.

COMMITTEE ON THE DEFENSE OF MEDICAL RESEARCH

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC HEALTH LEGISLATION)

To the President and House of Delegates:

During the current Society year, the Chairman of the Committee on the Defense of Medical Research received a request from the President of the Philadelphia County Medical Society for financial aid toward the expenses incident to a series of lectures on the subject of Medical Research. In response to a request from the chairman of this committee, our Board of Trustees authorized a contribution of $25.00 for the purpose named.

Our committee was represented by Dr. J. E. Sweet at a meeting in the interest of medical research recently held at the residence of Dr. W. W. Keen.

Respectfully submitted,
James D. Heard, Chairman;
Addinell Hewson,
Joshua Edwin Sweet.

COMMITTEE ON EFFICIENT LAWS ON INSANITY

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC HEALTH LEGISLATION)

To the President and House of Delegates:

During the past year, there has been no activity on the part of this Committee.

The Committee has been in close touch with the Bureau of Mental Health of the new Department of Public Welfare and approves certain proposed legislation which will be presented before the next Legislature by the Department.

Harry W. Mitchell, Chairman.

COMMITTEE ON SOCIETY COMITY AND POLICY

To the President and House of Delegates:

Early in the year the attention of the chairman of your committee was called to the fact that two of our component societies had adopted the resolutions sent broadcast by the "Medical Advisory Committee," and the suggestion was made that your committee remind these societies that, while it is perfectly proper for any component county society or any individual member of the Medical Society of the State of Pennsylvania to advise or to petition the delegates to the American Medical Association to vote for or against any measure, it is not within the province of a component county society to "instruct" the delegates to vote for or against any measure. The delegates to the A. M. A. being elected by the House of Delegates are responsible to that body only. The chairman of your committee, assuming that the members of the two societies might have already regretted their hasty and ill-advised action in approving the unwarranted criticism by the irresponsible "Medical Advisory Committee," and the Trustees of the State Society having already advised the county societies to act carefully in this matter, deemed it unnecessary to bring the matter to the attention of the other members of your commitee.

The officers of the State Society were requested to endorse an amendment to the constitution of a component county medical society proposed at its January meeting. This proposed amendment was referred to your committee for consideration and reply. After correspondence among its members your committee sent the following letter to the secretary of the component county society:

"Dear Doctor:

"The amendment to the constitution of your society proposed at your January meeting and referred by Secretary Donaldson to the Committee on Society Comity and Policy of the Medical Society of the State of Pennsylvania has been carefully considered, and it is respectfully suggested that before final action be taken on the amendment, its wording be modified to read as follows:

Article XIII

"Any member of this society who shall consult with or treat a patient in conjunction with anyone other than a legally qualified physician holding a degree of Doctor of Medicine, or a legally qualified dentist, shall upon presentation of sufficient evidence be censured and if guilty a second time of like offence shall be expelled from the county medical society. (This article shall not be construed as preventing a member from operating upon or treating a patient who may have been under the care or treatment of one not a practitioner of medicine, provided the member does not act in conjunction with, or share responsibility or remuneration with, one not a legal practitioner of medicine.)

"Will it not be well to invite your District Councilor, ——— ———, to be present at the meeting when the amendment is considered?

"In order to forestall possible unfavorable litigation it is suggested that the minutes of your meeting show that the action taken by your society has been regular in all respects. If any formal charge is made against a member, care should be taken that your records show that each step in the charge, notification and trial has been regular in every detail.

"Trusting in the continued harmonious activity of your society, we are, Fraternally yours,

"Frank G. Hartman,
"John B. Roberts,
"W. L. Estes,
"John B. McAlister,
"John J. Buchanan,
"C. L. Stevens.

"February 17, 1922."

The attention of your committee has been called to a possible new duty assigned to your committee by the revision committee of the Constitution and By-Laws. (See Section 3, Chapter VII, proposed revision of By-Laws.) If the House of Delegates makes it the duty of the Committee on Society Comity and Policy to submit a list of nominees for delegates and alternates to the House of Delegates of the A. M. A. your committee will be prepared conscientiously to submit an impartial list of nominees at the time of election.

Respectfully submitted,
C. L. Stevens, Chairman;
John B. Roberts,
William L. Estes,
John J. Buchanan,
John B. McAlister.

COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION

To the President and House of Delegates:

The work of the Committee on Health and Public Instruction has been similar to that done by the committee for the past two years, namely: societies being urged to arrange for at least one open meeting, when questions of public health were the topic of the day. A number of societies held such meetings.

This committee also coöperated with a number of agencies doing public health work in the schools of the state, namely: the Visiting Nurses' Association and Tuberculosis Societies.

This committee recommends that each component society set aside one meeting, during the coming year, when public questions shall be discussed, and that a public health committee be appointed in each society, whose duty it shall be to further the interests of the public health, by aiding all agencies engaged in public health work.

It is believed that by this method such agencies will be able to do a more definite line of work, and that the public will more fully appreciate and comprehend the work of public health, as being conducted by the medical profession.

Respectfully,
C. Howard Witmer, Chairman.
Lewis H. Taylor.
Harvey F. Smith,
John W. West.

COMMITTEE ON MEDICAL BENEVOLENCE

To the President and House of Delegates:

During the past year there have been two beneficiaries of the Medical Benevolence Fund. There have been no new applications. Those who have received the Fund seem extremely grateful and we believe that the aid is well applied. Through The Pennsylvania Medical Journal, notice has been extended to the Society of the existence of this means of relief for members who are in reduced circumstances or whose family may be in that condition. We think further publicity of the work of the Committee is desirable. Hereto is appended the report of the Treasurer of the fund.

William T. Sharpless, Chairman.

Receipts

Balance in bank August 25, 1921	$228.48
Received from Treasurer Lowman, Oct. 29, 1921	218.00
Received from Treasurer Lowman, April 8, 1922	32.25
Received from Treasurer Lowman, April 25, 1922	131.82
	$610.55

Disbursements

September 7, 1921	$50.00	
September 30, 1921	60.00	
September 30, 1921	60.00	
January 12, 1922	60.00	
January 12, 1922	60.00	
April 7, 1922	60.00	
April 7, 1922	60.00	
July 3, 1922	60.00	
July 3, 1922	60.00	
		530.00
Balance in bank August 5, 1922		$80.55

Respectfully submitted,
Edward B. Heckel, Treasurer.

COMMITTEE ON ARCHIVES

Since our last report your Committee has installed in the Harrisburg office of the Society a sectional bookcase containing bound volumes of the Transactions of the Medical Society of the State of Pennsylvania from 1854 to 1896, and bound volumes of The Pennsylvania Medical Journal from 1897 to 1921, inclusive.

The Library of the University of Pennsylvania contains bound volumes from 1854 to 1919. We acknowledge with gratitude the great assistance given our Committee by Asa Don Dickinson, Librarian of the University.

Through the columns of The Pennsylvania Medicil Journal we invited component societies to accept from a considerable surplus, bound volumes of the Transactions from 1854 to 1896, and we again call attention to the generous offer of former editor Dr. C. L. Stevens, of Athens, Pennsylvania, to present to any component county society unbound copies of the Journal from 1897 to 1920, provided the society will promise to have same permanently bound for its library.

We note with pleasure that the Mercer County Medical Society has completed a history of its organization and that the Cambria County Medical Society has recently published the histories of the presidents of that society. The Pittsburgh College of Physicians presented, during the past year, the first of a series to be known as the Bedford Lectures, in the form of a paper by Dr. Clement R. Jones, under the title "The Development of Medical Practice in Pittsburgh With Some Account of Our Early Pioneer Physicians." We have read "Some Old Books and Their Owners," an interesting and instructive historical article, read before the Luzerne County Medical Society by Lewis H. Taylor, M.D.

We admire the zeal displayed in the above mentioned instances, and trust that the coming year will record many other items which will keep alive the best traditions of our profession. If the older men of our Society do not take the proper interest in the history of medicine, our young men will lose much of the higher inspiration for the fullest development of our calling.

Walter F. Donaldson, Chairman;
Cyrus Lee Stevens,
Samuel Gerhard.

COMMISSION ON CANCER

(SUBSIDIARY TO THE COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION)

To the President and House of Delegates:

The members of the Commission have had no formal meeting but have transacted what business has been necessary by correspondence. In view of the "Cancer Week" campaign planned by the National Cancer Association and to which this Commission lends its active assistance, there has been no serious effort for public meetings.

The Commission is devoting its attention this year to a statistical study of cancer on the same plan that it followed about ten years ago, and expects to present a valuable report on these statistics some time during the coming year.

J. M. Wainwright, Chairman,
John L. Atlee,
Harold L. Foss,
Fred Fisher,
Wilmer Krusen,
Courtland Y. White,
Edward A. Weiss.

COMMITTEE ON REVISION OF THE CONSTITUTION AND BY-LAWS

To the President and House of Delegates:

The Committee on Revision of the Constitution and By-Laws, appointed at the 1921 meeting of the House of Delegates, has attempted to carry out the spirit of the motion creating the committee.

It has first provided for combining the office of the Secretary and Treasurer, and the Committee believes this proposed step a good one. Much time has been spent in defining and explaining the powers of the Board of Trustees. The responsibility for the conduct of certain of the committees has been fixed. A Committee on Public Relations has been established, which committee will combine the functions of the present Public Health Legislation Committee and the Committee on Health and Public Instruction. This committee shall act not only in the capacities outlined for the aforementioned committees but shall control all information that is to be available for those interested in medical problems, and also it will be empowered to conduct publicity campaigns in obedience to the resolution introduced and adopted at the 1921 Session. The language of certain sections has been rearranged, and the committee is thankful to Bernard J. Myers, Esquire, for his examination of the proposed draft.

The Committee has been in session, through correspondence and meetings, for some months and the Chairman has had the privilege of attending two meetings of the Board of Trustees of the Society, and the suggestions made by the Board of Trustees the committee believes invaluable. With some suggestions as to additions and changes, the Board of Trustees endorced the draft of the Constitution and By-Laws, appended hereto, which will be acted upon at the meeting of the House of Delegates at the session in October. While the Committee has given this a great deal of time and thought, it feels that every member of the House of Delegates should study the proposed draft as it is published, and offer such suggestions as may improve its efficiency at the October meeting.

W. H. Mayer, Chairman.

PROPOSED REVISION OF THE CONSTITUTION AND BY-LAWS*

Following is the majority report of the committee appointed to revise the Constitution and By-Laws of the Medical Society of the State of Pennsylvania, which is published in accordance with the provision set forth in the present Constitution and By-Laws:

CONSTITUTION

Article I.—Name

The name and title of this organization is The Medical Society of the State of Pennsylvania.

Article II.—Purposes of This Society.

The purposes of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Pennsylvania; to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment **[and enforcement]** of just medical laws; to promote friendly intercourse among physicians; to protect them against imposition and to enlighten and direct public opinion in regard to the great problems of **[state medicine]** *public health and hygiene*, so that the profession shall become more useful to the public in the prevention and management of disease and in prolonging and adding to the comfort of life.

Article III.—Component Societies

Component societies shall be those county medical societies, whose several constitutions and by-laws have been approved by this Society.

Article IV.—Membership

Section 1.—The membership of this Society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this Society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

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*Additions to the text printed in italics. Deletions from present text printed in brackets.

Note.—Reprinted from the Pennsylvania Medical Journal, June, 1922.

[Explanatory Note: A resolution was unanimously adopted that those members who were not now (September, 1919) citizens of the United States should be given six years (or until October, 1925) to complete their citizenship, and that anyone who had taken out his first citizenship papers should be considered eligible for membership.]

Physicians otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within six years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

Sec. 2.—Members whose *annual* assessments are received by the **[Secretary]** *Secretary-Treasurer* of this Society on or before March 31st, shall be entitled to all the privileges of this Society for the current year. One whose assessment is received after March 31st, **[shall be entitled to all the privileges of this Society except that he]** shall not be entitled to any benefit from the Medical Defense Fund from January 1st **[up]** to the date of the receipt by the **[Secretary]** *Secretary-Treasurer* of this Society of his name and assessment. **[The per capita assessment for new members elected and reported after July 1st, 1921, shall be one-half the yearly per capita assessment.]** *The annual assessment of new members, elected and reported between July 1st and November 1st, shall be one-half the annual assessment. Assessments received for new members elected and reported in November and December shall be the full annual assessment, which shall cover the assessment for the following calendar year.*

Sec. 3.—Each member in attendance at the annual session of this Society shall enter his name on a registration blank, indicating the component county medical society of which he is a member. When his right to membership has been verified by the official roster of this Society, he shall have a right to all the privileges of membership at that session. No member shall take part in any of the proceedings of the annual session until he has complied with the provisions of this section.

Sec. 4.—Any person who is under sentence of suspension or expulsion from a component county medical society or whose name has been dropped from its roll of members shall not be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Sec. 5.—Delegates to this Society from any state society entitled to representation in the American Medical Association shall, by presenting certificates of delegation duly signed, be entitled to seats and to participate in the scientific business of this Society. They shall not be entitled to vote, nor to hold office, nor be eligible to membership.

Sec. 6.—Any physician of reputable standing not a resident of Pennsylvania, but a member of his own state or territorial medical association, after an introduction by a member present, may by vote of a general meeting or of a section, be accorded the privilege of participating in the scientific discussions.

Sec. 7.—Any distinguished physician not a resident of this state but a member of his own state or territorial medical association may be elected an honorary member of this Society by the House of Delegates by a three-fourths vote at any annual session. Not more than two may be thus elected in any one year.

Article V.—House of Delegates

The House of Delegates shall be the legislative body of this Society, and shall be composed of: (1) Delegates elected by the component county medical societies: each component county medical society shall be entitled to send to the House of Delegates each year one delegate for every one hundred of its members or fraction thereof. (2) The presidents of the component county medical societies, or, in the absence of the president, the secretary of the component county medical society. (3) The President of this Society, and (4) ex officio the Trustees, **[the Secretary and the Treasurer]** *the Secretary-Treasurer* but without the right to vote.

If any component county medical society is without representation at the close of the roll call of the second meeting of any session of the House of Delegates, then the members registered in attendance from that county may select from their number the number of delegates which such county is regularly entitled to elect; if but one member is registered he shall be seated as the representative of that county. When any delegate is once seated, no change may be made during the session. No individual member shall be entitled to more than one vote.

No individual, occupying an ex officio membership in the House of Delegates, shall be seated as a delegate with vote.

Article VI.—Sections

The House of Delegates may provide for a division of the scientific work of this Society into appropriate sections.

Article VII.—Sessions and Meetings

Section 1.—This Society shall **[hold an]** *convene in* annual session on the first Tuesday of October at such place as may be determined by the House of Delegates **[from year to year]**, and each session shall continue for three days, or longer if required, by the business of the Society. The House of Delegates may by a three-fourths vote, which may be taken by mail, change the time or place of the next annual session.

Sec. 2.—Special meetings, either of this Society or of the House of Delegates, shall be called by the President on petition of twenty delegates or one hundred members.

Article VIII.—Officers

Section 1.—The officers of this Society shall be a President, four Vice-Presidents, **[a Secretary; an Assistant Secretary; an Executive Secretary, full time; a Treasurer;]** *a Secretary-Treasurer,* an Assistant Secretary, ten Trustees, who are also Councilors, and as many *District* Censors as there are component county medical societies.

Sec. 2.—The officers, except the Trustees **[and Executive Secretary]**, shall be elected annually by the House of Delegates to serve for one year, or until their successors are elected and installed.

[Sec. 3.—No member of the House of Delegates shall be eligible for the office of President.]

Sec. 3 (Formerly Section 4).—Two Trustees shall be elected annually by the House of Delegates to serve for a period of five years. No Trustee shall be eligible to succeed himself after he has served two full consecutive terms. Each Councilor district shall be entitled to one Trustee. A Trustee must be a member of one of the component societies of the Councilor district which he represents.

Article IX.—Funds

Section 1.—Funds shall be raised by an equal annual assessment on each member of the several component county medical societies. The amount of the assessment is to be fixed by the House of Delegates annually. Funds may also be raised by voluntary contributions and in any other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of this Society for publications and for such other purposes as will **[promote the welfare of the profession]** *further the interests of this Society.*

Sec. 2.—Each year, out of the funds of this Society, the Trustees shall appropriate a sum not to exceed $1.00 for each member to be set aside by the **[Treasurer]** *Secretary-Treasurer* as a special fund to be known as the Medical Defense Fund. This fund shall be kept separate from other moneys and may be invested by the **[Treasurer]** *Secretary-Treasurer* under the direction of the Board of Trustees and shall be used only for the legitimate expenses of members threatened with or prosecuted for alleged malpractice; provided, however, that no member of this Society shall be entitled to the benefits of this fund who was not in resident practice in the State of Pennsylvania when the alleged act of malpractice was committed.

Sec. 3.—Each year, out of the funds of this Society, the Trustees shall appropriate a sum not to exceed $1.00 for each member, to be set aside by the **[Treasurer]** *Secretary-Treasurer* as a special fund to be known as the Medical Benevolence Fund. This fund shall be kept separate from other moneys and may be invested by the **[Treasurer]** *Secretary-Treasurer* under the direction of the Board of Trustees, and shall be used only for the relief of pecuniary distress of sick or aged members or the parents, widows, widowers or children of deceased members.

Article X.—Referendum

Section 1.—A general meeting of this Society may by a two-thirds vote of the members present, order a general referendum on any question pending before or on any action taken by the House of Delegates, and when so ordered the House of Delegates shall submit such questions to the members of this Society, who may vote in person, or by mail, within fourteen days. The vote shall be received by the Chairman of the Board of Trustees and be counted by the President and **[Secretary]** *Secretary-Treasurer* of this Society and the result reported to the House of Delegates. If the vote is taken by mail, the vote to be valid must be participated in by a majority of the members of this Society to determine any question when it shall be binding upon the House of Delegates.

Sec. 2.—The House of Delegates may, by a two-thirds vote, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

Article XI.—Seal

Section 1.—This Society shall have a common seal, with power to break, change or renew the same at pleasure.

Sec. 2.—The seal shall contain the monogram "A. M. A." and "1847," within a circle on a keystone, at the sides of which shall appear: "Organized, 1848; Chartered, 1890," and the whole surrounded by a double circle containing the words, "Medical Society of the State of Pennsylvania."

Article XII.—Amendments

Proposals for amendments or alterations to this Constitution may be offered at any annual session or during the interim; if offered during the interim, such proposals must be sent to the **[Secretary]** *Secretary-Treasurer* of this Society at least four months before the next annual session. All proposals for amendments or alterations must appear either in the published minutes of the annual session or must be published in the Journal of this Society at least three months before the next annual session; and all such proposals for amendments or alterations must appear in the official call for the next annual session. If these conditions have been fulfilled, then the House of Delegates may adopt **[or reject]** such proposals by a two-thirds vote of the delegates present at the next annual session.

BY-LAWS

Chapter I.—General Meetings

Section 1.—All registered members may attend and participate in the proceedings and discussions of the general meetings and in the scientific work of the sections. The general meetings shall be presided over by the President, or by one of the Vice-Presidents, and at these meetings shall be presented the address of the President together with such scientific papers and discussions as may be arranged for in the program.

Sec. 2.—The general meeting or any of the sections may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and the public.

Chapter II.—House of Delegates

Section 1.—The House of Delegates shall meet on the day before that fixed as the first day of the annual session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the general meetings. The order of business shall be arranged as a separate section of the program.

Sec. 2.—Each delegate, before being seated, shall deposit with the Committee on Credentials a certificate, signed by the president and secretary under seal of the component county medical society stating that he has been legally and regularly **[elected]** *designated* as a delegate to this Society.

Sec. 3.—Twenty delegates shall constitute a quorum.

Sec. 4.—The House of Delegates shall give diligent attention to and foster the scientific work and spirit of this Society, and shall constantly study and strive to make each annual session a stepping stone to future ones of higher interest.

Sec. 5.—It shall consider and advise as to the **[material]** interests of the **[profession and of the]** public **[in those important matters]**, wherein it is dependent upon the profession, and shall use its influence to secure **[and enforce all]** proper medical and public health legislation and to diffuse popular information *of an educational nature* in relation thereto.

Sec. 6.—It shall make careful inquiry into the condition of the profession in each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such component county medical societies as already exist, and for organizing the profession in counties where societies do not exist. It shall specially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every legally qualified physician in every county of the state who is reputable has been brought under organized medical society influence.

Sec. 7.—It shall encourage graduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the component county medical societies.

Sec. 8.—It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

Chapter III.—Censorial and Councilor Districts

Section 1.—The State of Pennsylvania shall be divided into nineteen Censorial Districts, and each district shall have a separate board of censors. The board shall be formed by the House of Delegates of this Society electing one Censor from each component county medical society in the district. Each component county medical society is requested to present to the House of Delegates, for its consideration, the name of a suitable member for District Censor. Each district shall hold a district meeting at least once every two years, for the purpose of increasing acquaintance, good fellowship and organization among the physicians of the district. Only members of a component medical society in that district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component county medical society shall be invited to the meetings. The districts shall be constituted as follows:

First: Philadelphia.
Second: Chester and Delaware.
Third: Bucks, Lehigh, Monroe and Northampton.
Fourth: Berks, Montgomery and Schuylkill.
Fifth: Dauphin, Lancaster and Lebanon.

Sixth: Adams, Cumberland, Franklin, Fulton and York.
Seventh: Huntingdon, Juniata, Mifflin and Perry.
Eighth: Bedford, Fayette, Somerset and Westmoreland.
Ninth: Allegheny, Greene and Washington.
Tenth: Beaver, Lawrence and Mercer.
Eleventh: Crawford, Erie and Warren.
Twelfth: Cameron, Elk, McKean and Potter.
Thirteenth: Butler, Clarion, Forest and Venango.
Fourteenth: Armstrong, Indiana and Jefferson.
Fifteenth: Clinton, Lycoming, Tioga and Union.
Sixteenth: Blair, Cambria, Center and Clearfield.
Seventeenth: Bradford, Sullivan, Susquehanna and Wyoming.
Eighteenth: Columbia, Montour, Northumberland and Snyder.
Nineteenth: Carbon, Lackawanna, Luzerne, Pike and Wayne.

SEC. 2.—The Censors of each district shall consider every case of appeal from the decision of a component county medical society by a member who has been censured, suspended, or expelled, provided that the appeal be made within three months after the censure, suspension or expulsion. They shall report in writing their decision thereon to the county medical society, and also to the Councilors of this Society. They shall consider and dispose of all questions affecting the Principles of Medical Ethics that may be referred to them either by a component county medical society or by this Society. The decision of the Censors in every case must be signed by a majority of the board. In case a district contains an even number of Censors, and a tie vote results, the Councilor for that district shall cast the deciding vote. Any appeal or judicial question arising in a district composed of less than three county societies shall be referred directly to the Judicial Council of this Society.

SEC. 3.—The state shall be divided into ten Councilor Districts and each district shall be entitled to one Councilor. The Councilor Districts shall be constituted as follows:

First: First Censorial District.
Second: Third and Nineteenth Censorial Districts..
Third: Second and Fourth Censorial Districts.
Fourth: Fifth and Sixth Censorial Districts.
Fifth: Seventh and Sixteenth Censorial Districts.
Sixth: Eighth and Ninth Censorial Districts.
Seventh: Tenth and Eleventh Censorial Districts.
Eighth: Twelfth and Seventeenth Censorial Districts.
Ninth: Thirteenth and Fourteenth Censorial Districts.
Tenth: Fifteenth and Eighteenth Censorial Districts.

CHAPTER IV.—ELECTION OF OFFICERS.

SECTION 1.—All elections shall be by ballot of the House of Delegates and a majority of votes cast shall be necessary to elect.

SEC. 2.—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the second day of the general session. This order of business may be postponed to a definite time and place by a two-thirds vote of those present. In the election of officers of this Society, the **[Secretary]** *Secretary-Treasurer* shall call the roll of members of the House of Delegates, and each member, as his name is called, shall come forward to the President's desk and deposit his ballot. **[When counting the ballots the President shall call two members forward to assist and the Secretary shall call a member to keep a duplicate tally.]** *The President shall then appoint three members as Tellers, who shall count the ballots under the supervision of the Secretary-Treasurer.*

SEC. 3.—Any person known to have solicited votes for, or sought after, any office within the gift of this Society shall be ineligible for any office for two years.

SEC. 4.—The Chairman and Secretaries of all sections provided for by action of the House of Delegates shall be elected by the several sections at executive meetings held on the second day of the annual session.

SEC. 5.—INSTALLATION OF OFFICERS.—The officers of this Society, except the President, shall assume their duties at the close of the last meeting of the annual session at which they are elected.

SEC. 6.—INSTALLATION OF THE PRESIDENT.—The President shall be installed at the first general meeting of the annual session following that at which he was elected.

CHAPTER V.—DUTIES OF OFFICERS

SECTION 1.—The President shall preside at all meetings of this Society, and at the meetings of the House of Delegates. At the first general meeting of the annual session following his election he shall deliver an address on such matters as he may deem of importance to this Society. He may at any time make suggestions in writing to the House of Delegates or to any special or standing committee. He shall be ex officio a member of the Board of Trustees and Councilors. He shall be ex officio a member of all standing or special committees.

SEC. 2.—The Vice-Presidents shall assist the President in the performance of his duties; during his absence or at his request one of them shall officiate in his place. In case of the death, resignation or removal of the President, the vacancy shall be filled by the ranking Vice-President.

SEC. 3.—The **[Secretary]** *Secretary-Treasurer* shall attend the general meetings of this Society, the meetings of the House of Delegates and of the Board of Trustees. He shall have no vote in the Board of Trustees, nor in the House of Delegates **[unless seated as a delegate]**. He shall keep the minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to this Society **[except such as properly belong to the Treasurer]**. He shall receive and receipt for the **[per capita]** *annual* assessments from the component county medical societies **[and forward at least every two weeks to the Treasurer of this Society all funds of this Society that have come into his hands]**. He shall provide for the registration of the members and the delegates at the annual session. He shall aid the Councilors in the organization and improvement of component county medical societies, and in the extension of the **[power]** *influence* and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistance as may be ordered by the Trustees, and shall make an annual report to the House of Delegates. He shall supply each component county medical society with the necessary receipts and blanks for making its report. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. *He shall hold all funds of this Society, together with bequests and donations in such banks or trust companies as shall be designated by the Board of Trustees. He shall pay money out of the treasury on written orders signed by the President and approved by the Chairman of the Finance Committee of the Board of Trustees. He shall render annually to this Society full account of the state of funds. He shall give bond of a surety company in the sum of $20,000.00 for the faithful performance of his duties.*

SEC. 4.—The Assistant Secretary shall act as an aid to the **[Secretary]** *Secretary-Treasurer*, especially during annual sessions, and may take his place when necessary as a temporary Secretary.

[Sec. 5.—The Executive Secretary shall organize the medical profession for efficient action on proposed or pending legislation of interest to the general public and the medical profession. It shall

further be his duty to organize the machinery for the investigation of illegal practitioners of the healing art in the Commonwealth of Pennsylvania. He shall be appointed by the Board of Trustees. He shall act with the Committee on Public Health Legislation and shall be ex officio a member of this Committee. Adequate salary and other expenses of his office shall be provided for by the Board of Trustees.]

[Sec. 6.—The Treasurer shall hold all funds of this Society together with bequests and donations and deposit the same in such banks or trust companies as may be designated as depositories by the Board of Trustees. He shall pay money out of the treasury only on written orders signed by the President and countersigned by the Secretary. He shall render annually to this Society a full account of the state of funds. He shall give bond of a surety company in the sum of $15,000 for the faithful performance of his duties.]

Sec. 5 (Formerly Section 7).—At the first meeting of the Board of Trustees after the annual session of this Society, it shall organize by electing a Chairman and a Clerk, who shall keep a record of the minutes in the absence of the **[Secretary]** *Secretary-Treasurer.* The Chairman shall appoint *a Finance Committee of three* and such committees as may be necessary or desirable. The Board of Trustees shall have charge of all properties and the financial affairs of this Society. It shall recommend to the House of Delegates the amount of the annual assessment. It shall be the duty of the Board of Trustees to provide for and superintend the publication of the Pennsylvania Medical Journal and of all proceedings, transactions, and memoirs of this Society. It shall have full discretionary power to omit from the Pennsylvania Medical Journal, in part or in whole, any paper that may be referred to it for publication. It shall appoint **[a general manager and]** an Editor of the Journal **[which two positions may be held by one person]** and such assistants as may be necessary, and shall determine the salaries and the term and conditions of their **[employment]** *appointment.*

It shall exercise general supervision over the conduct of all Committees in the interval between sessions.

It shall be empowered to employ such administrative representative, or representatives, for the Society as shall be needed to conduct the work outlined for them by the Committee on Public Relations, or any other constituted or appointed committees. These representatives' activities shall be only of an executive nature, since all policies of this Society shall originate within the House of Delegates, the Board of Trustees, or within appointed or constituted committees. The term of employment of such representatives shall not exceed one year; the salary and conditions of their employment shall be determined by the Board of Trustees.

(Formerly Section 8.)—The Board of Trustees shall have full control of all arrangements for the annual session. It may **[appoint]** *employ* a Manager of Sessions and Exhibits, who shall carry out all the business details incident to the annual session of this Society. He shall provide suitable accommodations for the meeting places of this Society, *Board of Trustees* and the House of Delegates and the respective committees. He shall enlist the coöperation of the local Committee on Arrangements, and approve all its actions before this Society shall be responsible for expenditures recommended by **[it]** *the local committee.* He shall report an outline of the arrangements to the **[Secretary]** *Secretary-Treasurer* for publication in the program and in the **[State Journal]** *Pennsylvania Medical Journal,* and make such additional announcements during the session as occasion may require. He shall render to the Board of Trustees a full and itemized account of all receipts and expenditures on account of the annual session, and **[pay over to the Treasurer any balance left in his hands]** *he shall, from time to time (at proper intervals) remit moneys received to the Secretary-Treasurer. All items of expense in connection with the annual session shall be paid out of the Treasury on written orders signed by the President and approved by the Chairman of the Finance Committee of the Board of Trustees, excepting such small items as may be paid from a "Revolving Petty Cash Fund," which may be provided for this purpose.* He shall receive a salary to be fixed annually by the Board of Trustees. He shall give a bond of a surety company in the sum of $1,000.00 for the faithful performance of his duties.

The Board of Trustees may, at their discretion, combine any of these designated positions in a manner which they may deem in the best interests of this Society.

All resolutions or recommendations of the House of Delegates pertaining to the expenditures of money must be approved by the Board of Trustees before the same shall become effective. During the annual session of this Society, the Board shall hold meetings as often as may be deemed necessary and all matters referred to it by the House of Delegates shall be reported on within twenty-four hours, if so requested by the House of Delegates. The Board of Trustees shall have the accounts of the **[Secretary, Treasurer]** *Secretary-Treasurer* and the officers of the *Journal* audited annually or oftener if deemed desirable and shall make an annual report on the same to the House of Delegates. This report shall specify the character and cost of all publications of this Society during the year and the amount of all properties belonging to this Society.

In case of vacancy in the office of **[Secretary or Treasurer]** *Secretary-Treasurer* on account of death, or otherwise, the vacancy shall be filled by the Board of Trustees until the next annual session of the House of Delegates.

The Board of Trustees shall **[fix]** *designate* the salary of the **[Secretary, the Treasurer and the Executive Secretary]** *Secretary-Treasurer.* Regular meetings of the Board shall be held immediately after the annual session of this Society and on the first Wednesday in the month of February of each year. Special meetings of the Board may be called at any time by the Chairman or by six members of the Board. Six members of the Board shall constitute a quorum. During the intervals between the sessions of the House of Delegates, the Board of Trustees shall supervise the action of committees constituted by the action of the House of Delegates.

Sec. 6 (Formerly Section 9).—Board of Councilors.—Each Councilor shall be **[organizer and peacemaker]** *judicial representative of this Society* for a district consisting of certain counties. He shall visit the counties in his district at least once a year, for the purpose of organizing component county medical societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of component county medical societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor, in the line of duties herein imposed, may be allowed on a properly itemized statement; but this shall not be construed to include his expenses in attending the annual session of this Society.

Sec. 7 (Formerly Section 10).—The Board of Councilors shall be the Judicial Council of this Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component county medical societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the Council without discussion. It shall decide all questions **[of discipline]** affecting the conduct of members or component county medical societies, on which an appeal is taken from the decision of a board of censors, and its decision in all such matters shall be final.

SEC. 8 (Formerly Section 11).—In sparsely settled sections it shall have authority to organize the physicians of two or more counties into a society. Such societies, when organized and after their constitution and by-laws have been approved by this Society, shall be entitled to all rights and privileges provided for component county medical societies.

SEC. 9 (Formerly Section 12).—The Board of Councilors shall select a member of the bar of Pennsylvania as Legal Counsel of this Society, and is empowered to pay such counsel an annual retaining fee. To the Legal Counsel shall be submitted all suits for alleged malpractice brought against members of this Society and he shall be asked to endorse local counsel suggested **[or engaged]** by the Councilor to defend such suits. To him also shall all proposed appeals to higher courts be submitted. The proper fees for defending members of this Society in suits for alleged malpractice shall be paid out of the Medical Defense Fund, provided that the member has placed his case in the hands of this Society in accordance with the regulations adopted by the Council and approved by this Society, as follows:

a. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank which can be secured **[either from the Secretary of his county medical society,]** from the **[Secretary]** *Secretary-Treasurer* of the State Medical Society or from the Councilor for the district. The Society will not undertake the defense of any member unless his application is made within thirty days after service of summons.

b. The application must be endorsed by unanimous vote of all the censors of his county medical society present at a special meeting called for this purpose, after a rigid examination of all the facts in the case, not only as regards the applicant's membership and standing in his society but also as regards the worthiness of the applicant's case. It should be understood that the endorsement of the censors of a county medical society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return.

c. As soon as the application has received the endorsement of the censors of the county medical society, it should be sent to the Councilor of the District for his endorsement. The Society will not be responsible for attorney's fees incurred in the defense of any member, the defense of whom has not been approved by the Councilor for the district.

d. After the application has received the endorsement of the county medical society censors and the Councilor for the District, the management of the member's defense will rest with a committee consisting of the Councilor for the district, the President and the **[Secretary]** *Secretary-Treasurer* of the State Society.

e. The Councilor for the district or the **[Secretary]** *Secretary-Treasurer* of the State Society or both shall then arrange and conduct a conference with the legal representatives and other parties concerned, having in view the thorough discussion of all circumstances pertaining to the threatened suit and the possibility of its withdrawal. The Councilor or **[Secretary]** *Secretary-Treasurer* or both upon approval by the Trustees shall be paid for their time expended in this particular service and have refunded their legitimate expenses.

f. The applicant should sign a contract vesting in the Committee of Council sole authority to conduct the defense of his suit, and he should agree to make no compromise or settlement of the case without the consent of the Councilor of his district given in writing.

g. The State Society will not undertake the defense of any member who, after investigation by the censors and Councilor for the district, is believed guilty of criminal abortion, feticide, homicide or any criminal act, or who has not conformed to the recognized ethical laws in regard to these cases. It will only defend suit brought in the course of legitimate professional work.

h. The State Society will not pay any expenses for serving subpœnas nor the expense of witnesses residing within the county, nor will it pay judgment for fine awarded or imposed by the jury or court.

CHAPTER VI.—COMMITTEE ON PUBLIC RELATIONS

The Committee on Public Relations shall consist of nine elected members, three of whom are elected annually by the House of Delegates to serve for three years and ex officio the President, the President Elect, the Chairman of the Board of Trustees, the Chairman of the Finance Committee of the Board of Trustees, and the Secretary-Treasurer. It shall organize annually and elect its Chairman. It may recommend to the Board of Trustees the employment or appointment of such administrative representative, or representatives, as may be needed, and who shall serve under the direction of the Committee. This Committee shall represent the Society in securing legislation in the interest of public health and scientific medicine. It shall conduct and direct campaigns of public education in matters of public health and hygiene. It shall assist the component societies in the conduct of similar campaigns and shall act as a source of information to individuals, or civic or state bodies, who seek enlightment on matters of public health, medical legislation or scientific medicine. It shall act under the direction of the House of Delegates and in the interim between meetings it is authorized to institute such activities as, in its judgment, will further the purposes of this Society. The President may appoint committees to deal with special problems which may arise, such committees to work in conjunction with the Public Relations Committee.

CHAPTER VII (FORMERLY CHAPTER VI).—COMMITTEES

SECTION 1.—The standing committees of this Society shall be as follows, the appointments, when not otherwise provided for, to be made annually by the President:

A Committee on Scientific Work.
[A Committee on Public Health Legislation.]
A Committee on Society Comity and Policy.
[A Committee on Health and Public Instruction.]
A Committee on Benevolence.
A Committee on Arrangements.
A Press Committee.

SEC. 2.—The Committee on Scientific Work shall consist of the President, **[Secretary]** *Secretary-Treasurer*, Editor, Manager of Sessions and Exhibits, Chairman of the Committee on Arrangements, Chairman and Secretaries of the Sections, *Chairman of the Finance Committee of the Board of Trustees*, and the Chairman of the Committee on Scientific work appointed annually by the President. It shall determine the character and scope of the scientific proceedings of this Society for each session, subject to the instructions of the House of Delegates. At least thirty days previous to each annual session it shall prepare a program to be issued by the **[Secretary]** *Secretary-Treasurer*, announcing the order in which papers and discussions shall be presented.

[Sec. 3.—The Committee on Public Health Legislation shall consist of five members and the President and the Secretary. This committee shall represent the Society in securing and enforcing legislation in the interest of public health and scientific medicine. It shall act under the directions of the House of Delegates, and in the interim between the meetings of the House of Delegates it is authorized to undertake such activities as in its judgment will further the purposes it represents.]

SEC. 3 (Formerly Section 4).—The Committee on Society Comity and Policy shall consist of five members. This committee shall keep informed concerning matters between this Society and the American Medical

Association, between this Society and the component county medical societies, and between component county medical societies and their members, and shall recommend to the House of Delegates such action as will best uphold the dignity and honor of the medical profession, exalt its standards, extend its sphere of usefulness and promote the advancement of medical science.

It shall be the duty of the committee, after careful consideration, to submit to the House of Delegates a list of nominees for delegates and alternates to the House of Delegates of the American Medical Association. These nominations shall not preclude nominations from the floor of the House of Delegates.

[Sec. 5.—The Committee on Health and Public Instruction shall consist of five members. It shall be the duty of this committee, subject to the House of Delegates, to attempt to bring together the lay people and the profession, to increase confidence in scientifically trained physicians and to unite the public and the medical profession in a campaign for better health conditions.]

Sec. 4 (Formerly Section 6).—The Committee on Benevolence shall consist of the **[Secretary, the Treasurer,]** *Secretary-Treasurer* and three members to be selected annually by the Trustees, at least one of whom shall be a Trustee. This committee shall select its own chairman, secretary and treasurer, and shall have absolute and confidential jurisdiction over the distribution of such part of the Medical Benevolence Fund as may be placed in its hands. No money shall be paid from its treasury except on warrant signed by the chairman and secretary of the committee, and an annual audit of its accounts shall be made by a committee of the Trustees, the names of the beneficiaries being omitted. All beneficiaries shall be designated by number, and after each annual audit all communications tending to show the personality of the same shall be destroyed. This committee may solicit subscriptions, donations and legacies to be added to the principal of the Medical Benevolence Fund. It may also receive subscriptions to be used for the relief of members in distress from the effects of any special catastrophe.

Sec. 5 (Formerly Section 7).—The Committee on Arrangements shall be appointed by the President on the recommendation of the component county medical society of the county in which the annual session is to be held. The committee shall effect an organization and coöperate with and work under the advice and supervision of the Manager of Sessions and Exhibits in making arrangements for the annual session.

Sec. 6 (Formerly Section 8).—The Press Committee shall consist of the **[Secretary]** *Secretary-Treasurer*, the Manager of Sessions and Exhibits and the chairman of the local Committee on Arrangements. This committee shall have power to add to its number as needed and shall designate the duties of each member so appointed. This committee shall have general censorship over all matters for the public press in connection with the transaction of the general meetings, the scientific sections and the House of Delegates.

Chapter VIII (Formerly Chapter VII).—Committees of the House of Delegates

Section 1.—The regular committees of the House of Delegates shall be as follows, the appointments to be made annually by the President Elect early in September from the members already reported as members of the House of Delegates for the coming session of this Society:

A Committee on Credentials.

A Reference Committee on Reports of Officers and Standing Committees.

A Reference Committee on Scientific Business.

A Reference Committee on New Business.

A Committee on Place of Meeting.

Sec. 2.—The Committee on Credentials of the House of Delegates shall consist of three members of the House of Delegates for the coming session of this Society, to which shall be referred all questions regarding the registration and credentials of the delegates.

Sec. 3.—The Reference Committee on Reports of Officers and Standing Committees shall consist of three members of the House and to it shall be submitted all reports of officers and committees, not otherwise specifically referred to other committees, for its consideration and recommendation before action may be taken by the House.

Sec. 4.—The Reference Committee on Scientific Business shall consist of three members of the House and to it shall be referred all new business of a scientific nature, not otherwise specifically referred to other committees **[for its consideration and recommendation]** before action may be taken by the House.

Sec. 5.—The Reference Committee on New Business shall consist of three members of the House and to it shall be referred resolutions introducing ordinary new business, not specifically referred to other committees, before action may be taken by the House. This committee is specially charged with all resolutions conveying the thanks of the Society.

Sec. 6.—The House of Delegates on recommendation of the Committee on Scientific Work may authorize special commissions to undertake scientific investigations during the interim between the meetings of the House of Delegates. Such commissions shall be automatically discharged unless specifically continued by the House of Delegates.

Sec. 7.—*The Committee on Place of Meeting shall receive and consider invitations for the next annual session. It shall report its recommendations for action by the House of Delegates on the morning of the second day of the annual session. The report of this committee shall be the first order of business after the election of officers.*

Chapter IX (Formerly Chapter VIII).—County Societies

Section 1.—All county societies now in affiliation with this Society are component county medical societies. Those which may hereafter be organized in this state which shall have adopted principles of organization, not in conflict with this Constitution or these By-Laws, shall on approval of the Censors of the district become component parts of this Society. Only one component medical society from any one county shall be affiliated with this Society.

Sec. 2.—As rapidly as can be done after the adoption of this Constitution and these By-Laws, a medical society shall be organized in every county in this state, in which no component society exists.

Sec. 3.—Each component county medical society shall judge of the qualifications of its own members; but, as such societies are the only portals to this Society and to the American Medical Association, due diligence should be observed so that only reputable and legally registered physicians who are citizens of the United States are admitted to membership.

Sec. 4.—Any physician who may feel aggrieved by the action of a component county medical society in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Censors of the district for their decision.

Sec. 5.—In hearing appeals the Censors may admit oral or written evidence, as in their judgment will best and most fairly present the facts; but in every appeal, efforts at conciliation and compromise shall, on the part of the individual Censors and of the Board, precede all such hearings.

Sec. 6.—When a member in good standing in any component county medical society moves to another county in this state, he shall, on request, be recommended by his society to the component county medical society into whose jurisdiction he moves, for election without the delay attendant upon ordinary applications for membership.

Sec. 7.—Any physician living near a county line may hold his membership in the county most convenient for him to attend, on permission of the Councilor of his district.

Sec. 8.—Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county. Systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it includes every qualified physician in the county.

Sec. 9.—At some meeting at least **[six weeks]** *sixty days* in advance of the annual session of this Society, each component county medical society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred of its members and for each fraction thereof in good standing on July 1st preceding the session. The Secretary of the component county medical society shall send a list of such delegates to the **[Secretary]** *Secretary-Treasurer* of this Society immediately after their election.

Sec. 10.—The Secretary of each component county medical society shall keep a roster of its members and of the nonaffiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of registration or license to practice in the state, and such other information as may be deemed necessary. In keeping such a roster, the secretary shall note any change in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall endeavor to account for every physician who has lived in the county during the year.

Sec. 11.—The Secretary of each component county medical society shall during or before January of each year furnish the **[Secretary]** *Secretary-Treasurer* of this Society with a list of the officers and members of his county medical society, and shall report new members as soon as they are qualified as members of his society. He shall send the amount of the members' annual assessment at the same time their names are reported and also duplicates of the receipts given to the members of his society. He shall promptly notify the **[Secretary]** *Secretary-Treasurer* of this Society of any change in the addresses of the members of his society, and of losses in membership, giving the cause, such as death (with date), resignation, removal (with present address), or expulsion.

Sec. 12.—Each component county medical society shall notify the **[Secretary]** *Secretary-Treasurer* of this Society of any new By-Laws or rules that have been adopted, and furnish for publication in the Journal of the State Society brief notes of its deceased members. Each component county medical society shall designate one of its members to act as reporter for the Journal, who shall furnish such reports of the meetings of his society and such professional news as may be thought desirable for publication.

Chapter X (Formerly Chapter IX).—Miscellaneous

Section 1.—No address or paper before this Society, except those of the President and invited guests, shall occupy more than fifteen minutes in its delivery. In the discussion of any papers, no member shall speak longer than five minutes, except by unanimous consent.

Sec. 2.—All papers read before this Society or any of the sections shall become the property of this Society. Each paper shall be deposited with the **[Secretary]** *Secretary-Treasurer* when read.

Sec. 3.—The deliberations of this Society shall be governed by parliamentary usage, as contained in Robert's Rules of Order, when not in conflict with this Constitution or these By-Laws.

Sec. 4.—The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

Sec. 5.—At each annual session, a public reception shall be provided as part of the program, in honor of the President of the Society. This function shall be under the direction of the **[Secretary]** *Secretary-Treasurer* and the Manager of Sessions and Exhibits, and shall be paid for by this Society.

Sec. 6.—Any vacancy occurring in an appointive office shall be filled at once by appointment by the President *for the unexpired term.*

Any vacancy occurring in an elective office, *except in the case of the President Elect,* during the interim of *the* Annual Sessions, shall be filled by the Board of Trustees **[by election]** until the next regular session of the House of Delegates. *In the case of death or inability to serve of the President Elect the vacancy shall be filled at once by a special election by the House of Delegates.*

Chapter XI (Formerly Chapter X).—Amendments

These By-Laws may be amended at any annual session by unanimous consent, after lying over one day. If there be a dissenting voice, the amendment shall lie over for one year and take the course of amendments to the Constitution.

Respectfully submitted,
William H. Mayer, M.D., *Chairman;*
Joseph D. Findley, M.D.,
Jay B. F. Wyant, M.D.,
John B. McMurray, M.D.,
Robert E. Heath, M.D.

Pittsburgh, Pa., May 12, 1922.

The following changes in the above report of the Committee on Revision of the Constitution and By-Laws, suggested or approved by the Board of Trustees at a special meeting held July 6, 1922, will be offered for consideration of the House of Delegates at the 1922 session:

CONSTITUTION

Article II.—Purposes of this Society—delete the word "great" appearing before "problems" on the eleventh line.

Article V.—House of Delegates—on the third line change the word "elected" to "designated," which would change the sentence to read as follows: "(1) Delegates designated by the component county medical societies." In the same article the following change is suggested, beginning with the tenth line—"(3) The President of this Society, or the presiding officers of the House of Delegates, and (4) ex officio the Trustees, and the *Secretary-Treasurer,* but without the right to vote."

BY-LAWS

Under By-Laws, Chapter II.—House of Delegates. Sec. 2—Reinstate the word "elected" in brackets and delete the word "designated" in italics.

Under Chapter III, Secs. 1 and 3—eighth Councilor District to include the 17th and 18th Censorial Districts instead of the 12th and 17th; and the tenth Councilor District to include the 12th and 15th Censorial Districts instead of the 15th and 18th.

Chapter V.—Duties of Officers—the last word in Sec. 4, "Secretary," change capital letter S to small s.

Under Sec. 5 (Formerly Section 7.)—after "The Chairman shall appoint *a Finance Committee of three,*" insert "and a Committee on Supervision and Publication of the Pennsylvania Medical Journal."

At the end of the same paragraph before the beginning of the new paragraph in italics insert: "It shall be empowered to appoint an Executive Secretary, who shall perform such executive duties as the Board may designate, and who shall receive such salary, and serve for such period and under such conditions as the Board may determine."

At the end of the third line of the second paragraph in italics delete the two words "for them."

Sec. 5, formerly Section 8, the second sentence of the last paragraph, change as follows: "Regular meetings of the Board shall be held immediately after the annual session of this Society and on the first Tuesday in the months of December, February and May of each year."

Under Sec. 7, formerly Section 10, reinstate the two words "of discipline."

Sec. 9. (Formerly Sec. 12.) Change paragraph "a" to read as follows: "A member sued or threatened with suit for alleged malpractice should at once fill out the application blank which can be secured from the Councilor for the District or from the Secretary-Treasurer of this Society. The Society will not undertake the defense of any member unless his application is made within seven days after service of summons."

The following will become paragraph "b": "Legal procedure requires that an appearance be made in Court within thirty days after service of summons. If deemed expedient by the District Councilor he may, having ascertained from the Secretary-Treasurer of this Society that the member making application was in good standing at the time of the alleged malpractice, retain an approved attorney *to make appearance in court in response to service of summons.* The Society will not be responsible for attorney's fees incurred in behalf of any applicant, the defense of whom has not been approved by the Councilor for the District."

Paragraph "b" will become paragraph "c," and be changed to read as follows: "Before other assistance than the service specifically provided for in paragraph 'b' may be given, the application must be endorsed by unanimous vote of all the censors of his county medical society present at a special meeting called for the consideration of the worthiness of the applicant's case, as well as for the consideration of the applicant's standing in his Society. It should be understood that the endorsement of the censors of a county medical society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return."

The following will become paragraph "d": "Immediately after the application has received the endorsement of the censors of the county medical society, it shall be returned to the Councilor of the District."

Paragraph "d" will become paragraph "e," and be changed to read as follows: "After the application has received the endorsement of the county medical society censors and the Councilor for the District, the management of the member's defense will rest with the Committee of Council, the Councilor for the District, the President, the Secretary-Treasurer of this Society, and the necessary attorney or attorneys."

Change paragraph "e" to paragraph "f" and change to read as follows: "The Councilor for the District or the Secretary-Treasurer of the State Society or both shall then arrange and conduct a conference with the legal representatives and other parties concerned, having in view the thorough discussion of all circumstances pertaining to the threatened suit and the possibility of its withdrawal. The Councilor or Secretary-Treasurer or both upon approval by the Trustees shall be paid for their time expended in this particular service and have refunded their legitimate expenses."

Paragraph "f" will become paragraph "g," and be changed to read as follows: "The applicant shall sign a contract vesting in the Committee of Council sole authority to conduct the defense of his suit, and he shall agree to make no compromise or settlement of the case without the consent of the Councilor of his district given in writing."

Paragraph "g" will become paragraph "h." Paragraph "h" will become paragraph "i."

Chapter VII. (Formerly Chapter VI.)—Committees —Change back to Chapter VI and under this chapter, Sec. 1, after "A Committee on Scientific Work" insert "A Committee on Public Relations." Chapter VI.—Committee on Public Relations becomes Section 3 under the new Chapter VI and is changed to read as follows:

"The Committee on Public Relations shall consist of nine members appointed by the President, three of whom are appointed annually to serve for three years, and ex officio the President, the President-Elect, the Chairman of the Board of Trustees, the Chairman of the Finance Committee of the Board of Trustees, and the Secretary-Treasurer. It shall organize annually and elect its Chairman. This Committee shall represent the Society in securing legislation in the interest of public health and scientific medicine. It shall conduct and direct campaigns of public education in matters of public health and hygiene. It shall assist the component societies in the conduct of similar campaigns and shall act as a source of information to individuals, or civic or state bodies, who seek enlightenment on matters of public health, medical legislation or scientific medicine. It shall act under the direction of the House of Delegates and in the interim between meetings it is authorized to institute such activities as, in its judgment, will further the purposes of this Society. The President may appoint committees to deal with special problems which may arise, such committees to work in conjunction with the Public Relations Committee."

The numbers of the succeeding chapters to be as they were before revised report. Change number of sections, Chapter VI, Sec. 3, to be Sec. 4; Sec. 4 to be Sec. 5, etc.

In Sec. 7 italicized under Chapter VIII (formerly Chapter VII)—Committees of the House of Delegates. Change to read "The Committee on Place of Meeting shall receive and consider invitations for the next annual session. It shall transmit all invitations and report its recommendations for action by the House of Delegates on the morning of the second day of the annual session. The report of this committee shall be the first order of business after the election of officers.

Respectfully submitted,

William H. Mayer, M.D., Chairman;
Joseph D. Findley, M.D.,
Jay B. F. Wyant, M.D.,
John B. McMurray, M.D.,
Robert E. Heath, M.D.

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The Medical Society of the State of Pennsylvania

Organized 1848 Incorporated, December 20, 1890

Officers and Members of the Sixty-three Component County Societies
June 30, 1922

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Jacob, Frederick M., Pittsburgh Life Bldg.
Jacobowitz, Aaron, 8084 Jenkins Arcade.
Jaequish, Charles J., Columbia Hospital.

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Jamison, Daniel I., 622 Chestnut St.
Jamison, John M., 1015 Highland Bldg.
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Jennings, Charles W., Brier Cliff Rd., Wilkinsburg.
Jennings, Samuel D., Sewickley.
Jenny, Thomas G., Penn and Negley Aves.
Jew, Henry D., 2306 Arlington Ave.
Johnson, Lloyd W., 401 Empire Bldg.
Johnson, Samuel H., 4025 Butler St.
Johnston, Frank D., 432 Columbus Ave.
Johnston, George C., Jenkins Arcade.
Johnston, James I., 201 S. Craig St.
Johnston, James R., 1415 Severn St.
Johnston, Robert C., Alter Bldg., New Kensington (Westmoreland Co.).
Johnston, Zoe Allison, 51 Fordham Ave.
Jones, Clement R., 816 Empire Bldg.
Jones, Enoch L., 1131 McClure St., Munhall.
Jones, Herbert Leroy, 5014 Jenkins Arcade.
Jones, Russell R., 116 Linden Ave., Edgewood.
Jones, Wesley W., 523 Penn Ave., Wilkinsburg.
Jones, William A., 181 Baldwin St., Hays.
Jones, William W., Highland Farms, North East (Erie Co.).
Jordan, Henry D., 317 S. Millvale Ave.
Jordan, Stewart S., 1902 Jenny Lind St., McKeesport.
Joyce, Francis W., 501 Lincoln Ave., Bellevue.
Kalet, Harry J., 815 Wylie Ave.
Kamens, Alfred F., 1401 Fifth Ave.
Kaufman, Albert S., New Kensington (Westmoreland Co.).
Keebler, Charles Barton, McKees Rocks Trust Bldg., McKees Rocks.
Keller, Nile P., 630 Union Arcade.
Kellogg, Frederic S., 5510 Ellsworth Ave.
Kelly, J. Clarence, Reuben Bldg., McKeesport.
Kelso, John S., 740 California Ave., Avalon.
Kennedy, David D., 1720 Murray Ave.
Kenworthy, Frank, E. E. Trust Bldg.
Kern, Frank M., 2423 Library Rd., Fairhaven.
Kerr, Harry J., 708 Chartiers Ave., McKees Rocks.
Kerr, John Cleon, 913 S. Evans Ave., McKeesport.
Kerr, J. Purd, 515 Fordham Ave. S., Hills Sta.
Kerr, Thomas R., Oakmont.
Ketterer, Clarence H., 3519 Fifth Ave.
Keyser, Charles F., 15 N. Duquesne Ave., Duquesne.
Kifer, Logan M., 537 Ringgold St., McKeesport.
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King, Richard A., 2517 Perrysville Ave., N. S.
King, Russell H., 1742 Brighton Road, N. S.
King, S. Victor, Bellefield Dwellings.
Kipp, Harold A., Mercy Hospital.
Kirch, John P., E. E. Trust Bldg.
Kirk, Donald I., 902 E. E. Trust Bldg.
Kirk, Thomas T., 4916 Liberty Ave.
Kirk, William H., Fulton Bldg.
Kline, Roscoe T., 3472 Perrysville Ave., N. S.
Klinzing, Henry, 12th floor, May Bldg.
Kneedler, G. Clyde, 501 Jenkins Bldg.
Knorr, Lawrence R., Fernley, Nevada.
Koch, Scott L., Jenkins Arcade.
Kocher, Quintin S., Cecil (Washington Co.).
Koenig, Adolph, 1111 Westinghouse Bldg.
Kohberger, Henry P., 118 S. Negley Ave.
Kolski, John J., 1704 Carson St.
Koontz, David M., 907 Fifth Ave., New Kensington (Westmoreland Co.).
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Kraft, Alfred H., 47 S. Eleventh St.
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Kreiger, George L., New Kensington (Westmoreland Co.).
Krepps, Allen L., 401 Bessemer Bldg.
Kridel, Louis M., 3802 Brighton Road.
Kunkel, Howard W., 3701 Forbes St.
Kuntz, Benjamin, 924 Vickroy St., N. S.
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Lamb, William Jean C., Homestead.
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Landon, Lyndon H., Jenkins Arcade Bldg.
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Langfitt, William S., St. John's Hospital.
Langham, William H., 811 West St., Homestead.
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Lasday, Louis, 5128 Second Ave.
Lauer, Cyril F., 4400 Butler St.
Lauffer, Charles A., 521 Franklin Ave., Wilkinsburg.
Laughlin, John P., 131 N. Highland Ave.
Laurent, F. Victor, 107 Morewood Ave.
Lawson, William E., Ann St., Homestead.
Lear, Isaac N., Vandergrift (Westmoreland Co.).
Lebeau, Samuel I., 1536 Center Ave.
Lehner, William H., 1904 Carson St.
Leibold, George, 1208 Itin St., N. S.
Leininger, Charles P., Fulton Bldg.
Lerch, Donald G., 3616 California Ave.
Lermann, William W., 5136 Jenkins Arcade.
Lewin, Abraham, 1809 Carson St.
Lewin, Adolph L., 3703 Penn Ave.
Lewis, Edward C., Verona.
Leydic, Clarence L., Tarentum.
Leydic, Cyrus C., Natrona.
Lichtenfels, Frederick V., 1945 Fifth Ave.
Lichtenstein, Meyer B., 1536 Center Ave.
Lichty, John A., Fifth Ave. and Neville St.
Lindeman, Charles E., 707 E. E. Trust Bldg.
Lindsay, Charles S., 3540 McClure Ave.
Lindsay, James A., Jenkins Bldg.
Linn, Jay G., 6678 Woodwell St.
Lippincott, J. Aubrey, Jenkins Bldg.
Litchfield, Lawrence, Jenkins Arcade.
Lloyd, John G., 959 Greenfield Ave.
Lloyd, Pressley M., 6322 Station St.
Logan, Edward P., 516 Federal St.
Logan, James S., 516 Federal St., N. S.
Long, Gilbert F., 2115 Noble Ave., Swissvale.
Long, Herbert M., 231 Shady Ave.
Long, James McMaster, 4910 Center Ave.
Love, James H., 622 Front St., Verona.
Lowrie, Robert N., 436 Library St., Braddock.
Lowrie, Walter James, 714 Braddock Ave., Braddock.
Ludwig, David B., 1119-1121 Highland Bldg.
Luke, Frank E., Highland Bldg.
Lukehart, Joseph M., Punxsutawney (Jefferson Co.).
Lurting, Clarence W., 516 Federal St.
Luther, John M., Jenkins Arcade.
Lyon, Alvin K., 413 North Ave., Millvale.
McAboy, C. Bradford, 1301 East End Trust Bldg.
McAdams, Edward C., Frankstown and Laketon Ave.
McAdams, Robert J., 4900 Liberty Ave.
McBride, John L., 172 Center Ave., Emsworth.
McCague, Edward J., Mercy Hospital.
McCain, Gilpin M., Westinghouse Bldg.
McCarrell, James R., 1115 Bidwell St.
McCausland, William S., Chula Vista, California.
McClellan, Robert H., Singer Memorial Laboratory.
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McClymonds, Horace S., 502 Hay St., Wilkinsburg.
McCollough, Thomas B., 816 Empire Bldg.
McComb, Samuel F., Tarentum.
McCombs, William H., 26 S. Fourteenth St.
McConnaughy, James B., Rossiter (Indiana Co.).
McConnell, Thomas E., New Kensington (Westmoreland Co.).
McConnell, Thomas W., Jenkins Bldg.

McConnell, William John, 4800 Forbes St.
McCorkle, Samuel C., 3301 Brighton Rd., N. S.
McCorkle, William P., 659 Sherwood St., Sheridan.
McCormick, Bernard J., 2406 Arlington Ave.
McCormick, Earl V., Grant St., Munhall.
McCormick, John C., 224 Shiloh St.
McCracken, William, 120 S. Negley Ave.
McCready, E. Bosworth, Keenan Bldg.
McCready, Frank L., Sewickley.
McCready, J. Homer, 816 Empire Bldg.
McCready, Joseph A., Greenwich, O.
McCready, Robert J., 909 Keenan Bldg.
McCreery, Albert H., 8133 Jenkins Arcade.
McCulloch, William P., Cheswick.
McCullough, John F., 220 S. Negley Ave.
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McCune, David P., 208 Masonic Temple, McKeesport.
McCurdy, Stewart L., 8103 Jenkins Arcade.
McFarland, William W., 1202 E. E. Trust Bldg.
McGarvey, Samuel C., Bridgeville.
McGeary, William J., R. D. 2, Allison Park.
McGee, Rea P., Jenkins Building.
McGrath, John F., 1434 Fifth Ave.
McGregor, William J., 744 Franklin Ave., Wilkinsburg.
McGuire, Hugh E., Pittsburgh Life Bldg.
McKee, Carlisle E., Park Bldg.
McKee, George J., Westinghouse Bldg.
McKelvy, James P., 519 N. Highland Ave.
McKenna, William B., 1000 Sheridan Ave.
McKennan, Moore S., 3612 Dawson St.
McKennan, Thomas M. T., Jenkins Arcade.
McKibben, Alpheus, Highland Bldg.
McKibben, Samuel H., 1103 E. E. Trust Bldg.
McKinnon, Charles L., McKees Rocks.
McKinstry, Guy H., 1224 Westinghouse Bldg.
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McLenahan, Thomas M., Greenfield Ave.
McMaster, Gilbert C., 314 Washington Road.
McMasters, David M., Russellton.
McMeans, Joseph W., 5020 Liberty Ave.
McMullen, James P., Mercy Hospital.
McMurray, Thomas E., 553 Trenton Ave., Wilkinsburg.
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McNaugher, Samuel N., 2341 Perrysville Ave.
McNeely, John F., Munhall.
McNeil, George W., Liberty Bank Bldg.
McQuaid, Joseph R., Leetsdale.
Mabon, Thomas McC., 199 Meade St., Wilkinsburg.
Macdonald, Clarence P., 123 Beltzhoover Ave.
MacDonald, George F., Tarentum.
Macfarlane, James W., 1108 Westinghouse Bldg.
Mackrell, John S., 3944 Liberty Ave.
MacLachlan, A. Alexander, May Bldg.
Maclachlan, William W. G., 1133 Wightman St.
Madden, Francis J., 130 W. Grant Ave., Duquesne.
Magee, J. Elmer, Carnegie.
Magoffin, Montrose B., 4630 Fifth Ave.
Mahan, J. Clay, 2400 Berg St., S. S.
Maits, Charles B., 6692 Kinsman Rd.
Major, Richard S., 118 W. Ohio St., N. S.
Mallison, Elizabeth C., 512 Sixth Ave., McKeesport.
Malone, Harry N., 319 Park Bldg.
Manley, Thomas H., Tarentum.
Marcus, Samuel J., 1641 Fifth Ave.
Marcy, Charles H., 317 East End Ave.
Marick, Simon W., 1520 Center Ave.
Markel, James Clyde, Westinghouse Bldg.
Markell, William O., 413 Whitney Ave., Wilkinsburg.
Marks, Orrie Lester, 531 Brookline Blvd.
Marks, Philip E., 542 Homewood Ave.
Marshall, Calvin C., 439 Charles St., Knoxville.
Marshall, Caroline S., 7045 Hamilton Ave.
Marshall, Watson, Diamond Bank Bldg.
Marshall, William N., Aspinwall.
Martin, David B. W., 300 Westinghouse Bldg.
Martin, George E., Duquesne.
Martin, John L., 127 N. Highland Ave.
Martin, W. Walton, Main St. and Penn Ave.
Mase, Jesse Z., 5620 Forbes St.
Mateer, Harry O., 2015 Carson St.
Matheny, A. Ralston, E. E. Trust Bldg.
Mathewson, Franklin W., Oakdale.
Mattox, Edgar E., 2102 Fifth Ave.
Mawhinney, Harvey N., Mercy Hospital.
Maxwell, William Clark, Highland Bldg.
Mayer, Edward E., Jenkins Arcade.
Mayer, William H., 5074 Jenkins Arcade.
Meanor, Harold Henderson, Coraopolis.
Mechling, Curtis Campbell, Jenkins Arcade.
Meckel, Louis O., S. Negley and Elmer Sts.
Mehl, Omar H., 130 Gordon Ave., Swissvale.
Mercur, William H., 5244 Fifth Ave.
Meredith, Evan William, Jenkins Arcade.
Metzgar, Daniel A., 600 Braddock Ave., Braddock.
Metzger, George, 1018 Chestnut St., N S.
Meyers, Gilbert B., 5074 Jenkins Arcade.
Midgley, Harry S., Atwood & Forbes St.
Miller, Franklin B., Fulton Bldg.
Miller, Harold A., Pittsburgh Life Bldg.
Miller, James M., Hickory, R. D. 4 (Washington Co.).
Miller, Laird O., 516 Federal St.
Miller, Robert T., Jr., 100 Edgevale Road, Roland Park, Baltimore, Maryland.
Miller, Thomas A., 59 Rodgers Ave., Bellevue.
Milligan, Alexander M., 725 Jenkins Bldg.
Milligan, John D., 1675 Montpelier Ave.
Milligan, Robert X., Sandusky St. and Park Way.
Milligan, Samuel C., Jenkins Bldg.
Mills, William W., 35 W. Grant Ave., Duquesne.
Mitchell, Atlee, 4125 Main St.
Mitchell, Lewis T., Aspinwall.
Mitchell, Lou M., Jenkins Bldg.
Mitchell, William T., 410 S. Pacific Ave.
Montgomery, Ellis S., 725 Jenkins Bldg.
Montgomery, W. Harry, Wall St., Pitcairn.
Mooney, Voight, 3550 Campus St.
Moore, Charles C., 3528 Butler St.
Moore, Thomas F., 5500 Kentucky Ave.
Morgan, Joseph S., 119 Clearview Ave., Crafton.
Morris, Alanson F. B., 6901 Hamilton Ave.
Morrow, Frank L., 817 Bell Ave., N. Braddock.
Morrow, H. Wilson, Swissvale.
Morton, Charles W., 270 Tennyson Ave.
Moyer, Irwin J., 3525 Forbes St.
Moyer, Ray P., Highland Bldg.
Moyer, Sue S., 120 Electric Ave., East Pittsburgh.
Mullen, Charles E., Cambridge Springs (Crawford Co.).
Munden, John J., 3918 Grenet St., N. S.
Munster, James A., 716 Arch St.
Murdoch, J. Floyd, Bessemer Bldg.
Murphy, Arthur Irwin, 5313 Ellsworth Ave.
Murphy, Harry L., 2949 Chartiers Ave.
Murray, Charles K., East End Trust Bldg.
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Narr, Frederick, Passavant Hospital.
Nason, F. Thoburn, Ruben Bldg., McKeesport.
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Nealon, William A., 110 S. Graham St.
Neely, Elmer E., 1302 Pennsylvania Ave., N. S.
Neely, Frank, 3909 Perrysville Ave., N. S.
Neff, Edward L., 920 Park Bldg.
Nelan, Thomas G., Liberty Bank Bldg.
Nelson, Christian, 1233 Woodland Ave., N. S.
Nettleton, DeWitt B., Sewickley.
Nevins, Harry, 5204 Butler St.
New, Grant J. A., 917 Carson St.
Newcomb, Cyrenius J., Bellefonte, R. D. 3 (Center Co.).
Newell, Joseph R., Hays.
Nicholls, J. Calvin, 548 Braddock Ave., Braddock.
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Norcross, Clarence E., Clairton.
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Nowry, Samuel E., 405 Annie St., Wilmerding.
O'Brien, Michael E., 2808 Sarah St.
Offutt, Susan R., Westinghouse Bldg.
Ohail, Joseph C., 412 W. North Ave., N. S.
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Opipari, Archilli U., 31 Chatham St.
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Ord, Edward Y., 1701 Hucy St., McKeesport.
Orr, Charles A., Crafton.
Orris, Charles S., Tarentum.
Osterloh, Charles T., 300 E. North Ave., N. S.
Owens, Charles K., Jenkins Arcade.
Owens, John R., 3337 Dawson St.
Oyer, Harry W., Jenkins Bldg.
Page, Claude W., McKees Rocks.
Palmer, Chauncey L., Diamond Bank Bldg.
Parke, Delos H., McKean Bldg., New Kensington (Westmoreland Co.).
Patterson, Ellen James, Westinghouse Bldg.
Patterson, Fred L., Coraopolis.
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Phillips, R. J., 67 Amanda Ave.
Phillips, Samuel R., 247 Charles St.
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Pierce, Glen McK., 3408 Versailles Ave., McKeesport.
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Plyler, James L., 7217 Bennett St.
Pochapin, Irwin M., 1317 Fifth Ave.
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Pollock, Harry O., 207 Marguerite Ave., Wilmerding.
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Price, Charles R., 1005 Wylie Ave.
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Ratner, Simon H., 5144 Butler St.
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Rectenwald, John J., 132 Brownsville Rd.
Rectenwald, Lawrence E., 1820 Ley St., N. S.
Rectenwald, William Edward, 2700 Brownsville Rd., Mt. Oliver Station.
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Reed, I. Bebout, 11 Emily St., Crafton.
Reed, John C., 39 N. Duquesne Ave., Duquesne.
Reed, Joseph M., Diamond Bank Bldg.
Rees, David L., Jenkins Arcade.
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Resmer, Norbert J., 315 Brownsville Rd.
Ressa, Daniel A., 7618 Bennett St.
Reusch, George F., 409 E. North Ave.
Rhodes, Frederick A., 5119 Jenkins Arcade.
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Rinard, Charles C., Homestead.
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Ritchey, John B., 1264 N. Catalina Ave., Pasadena, Calif.
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Rittenhouse, Harry H., Federal.
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Robinson, James W., 4439 Grant Blvd.
Robinson, Ralph V., Jenkins Arcade.
Robinson, Wilton H., Jenkins Arcade.
Rock, Norbert F., 2336 California Ave., N. S.
Rohm, Uriah F., 217 E. Main St., Carnegie.
Roose, Arthur E., 201 Beech St., East Pittsburgh.
Rosenberg, Nicholas L., 630 Fulton Bldg.
Ross, William F., 307 Freeport St., Aspinwall.
Rossiter, Frank S., 7339 McClure Ave., Swissvale.
Rowan, Charles, 269 Main Ave.
Rowland, Ivo E., Elizabeth.
Ruben, Jacob A., Jenkins Arcade.
Rubenstein, Louis G., Braddock.
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Rugh, John B., 430 Second St., Pitcairn.
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Sakarraphos, Stelios N., 1007 Wylie Ave.
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Schaefer, Charles N., Jenkins Arcade.
Schatzman, Edward P., 710 Foreland St., N. S.
Scheffer, Carl J., 527 Jackson St., N. S.
Schein, J. Jay, 306 N. Negley Ave.
Schildecker, Charles B., Park Bldg.
Schill, Joseph J., 3709 Butler St.
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Schonfield, Moses, 432 Union Arcade.
Schoyer, George Shires, Highland Bldg.
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Seedenberg, Jesse P., 12 Roselawn Terrace.
Seegman, Simon, 8113 Jenkins Arcade.
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Shaffer, P. T. Barnum, Elizabeth.
Shaffer, Phineas J., 1120 Carson St.
Shallcross, William G., Highland Bldg.

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Shaw, Byron E., Springdale.
Shaw, Henry A., 2223 Carson St.
Shepard, Jackson B., 6449 Frankstown Ave.
Sheppard, Thomas T., 1015 Highland Bldg.
Sherman, William O., Carnegie Bldg.
Sherrill, Alvin W., Highland Bldg.
Shillito, Nicholas G. L., May Bldg.
Shultz, Charles E., Castle Shannon.
Shuman, George H., Park Bldg.
Shuster, Arthur R., Clairton.
Sieber, Paul R., 7 Highland Ct.
Sigal, Harry M., 2139 Wylie Ave.
Sigmann, Alfred S., 404 Bessemer Bldg.
Silman, Charles N., 992 Lilac St.
Silsby, Frederick W., 1004 Garfield St., Tarentum.
Silver, David, Jenkins Arcade.
Simon, David L., Jenkins Arcade.
Simonton, Thomas G., 5321 Fifth Ave.
Simpson, Frank F., Jenkins Arcade.
Simpson, John Reid, 665 Maryland Ave.
Simpson, Sumner C., East End Trust Bldg.
Singley, John DeV., 812 N. Highland Ave.
Sleppy, Roy E., 408 May Bldg.
Sloan, Edgar H., 7435 Church Ave., Ben Avon.
Slocum, Morris A., 378 Butler St., Etna.
Smeltz, George W., 1018 Westinghouse Bldg.
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Smith, Jacob C., Tarentum.
Smith, John L., 11 Emily St., Crafton.
Smith, Joseph B., 828 Braddock Ave., Braddock.
Smith, LaMonier, 319 Park Bldg.
Smith, Lawrence D., Pitcairn.
Smith, Louis N., 2014 Noble St., Swissvale.
Smith, Stanley S., 613 Jenkins Bldg.
Snedden, Alexander R., McKeesport.
Snitzer, Henry M., 1536 Center Ave.
Snowden, Roy Ross, Jenkins Arcade.
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Stanton, Charles C., Jenkins Arcade.
Stanton, James N., 3501 Fifth Ave.
Staufft, Orson T., 1159 Davis Ave.
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Steele, Paul B., 12 Lawson Ave., Crafton.
Steele, Robert L., 702 Locust St., McKeesport.
Steffler, Samuel S., 5012 Penn Ave.
Steffy, John L., 111 Brookline Blvd.
Steim, Charles J., 435 Sixth Ave.
Steim, Joseph M., New Kensington (Westmoreland Co.).
Steinman, David, 1543 Center Ave.
Steinmetz, Olive B., Eighth and Ann Sts., Homestead.
Sterrett, William J., Jenkins Arcade.
Stevenson, Alexander M., Jenkins Arcade.
Stevenson, Ellerslie W., Farmers' Bank Building.
Stevenson, James Wylie, 1111 N. Park St., McKeesport.
Stewart, Acheson, Union Arcade Bldg.
Stewart, J. Boyd D., Wilson.
Stewart, Richard C. M., 6101 Broad St.
Stewart, Wylie J., 114 Fourth Avenue, Coraopolis.
Stieren, Edward, Union Arcade.
Stimson, George W., Jenkins Arcade.
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Sturm, Samuel A., 5118 Jenkins Arcade.
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Stybr, Joseph, Bessemer Bldg.
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Sunstein, Noah, 509 Locust St., McKeesport.
Sutton, Edward Lincoln, Lincoln Ave., Bellevue.
Swanton, Robert V., 44 S. Pacific Ave.
Swindler, Charles M., 1027 Carnegie Bldg.
Swope, Lorenzo W., Park Bldg.
Taylor, Ann Gray, 800 Main St., Sharpsburg.
Taylor, Edytha E., 11 Crafton Ave., Crafton.
Taylor, Martin C., 415 Warrington Ave.
Taylor, Robert L., 4740 Liberty Ave.
Taylor, William V. M., 629 Walnut St., McKeesport.
Terheyden, William A., 4810 Liberty Ave.
Textor, Charles S., 629 E. North Ave.
Thomas, Clarence M., 25 Nobles Lane.
Thomas, David O., 889 Fifth Ave., New Kensington (Westmoreland Co.).
Thomas, Vernon D., Highland Bldg.
Thompson, Elmer J., 1260 Pennsylvania Ave.
Thompson, J. Calvin, 503 Union Ave., N. S.
Thompson, Lloyd L., 305 E. Eighth Ave., Homestead.
Thompson, William H., 1203 Monterey St.
Thoms, Joseph F., 1515 Lowrie St., N. S.
Thorne, John M., 7036 Jenkins Arcade.
Thunhurst, Wilford L., 1112 Swissvale Ave., Wilkinsburg.
Titus, Paul, Highland Bldg.
Todd, Frank L., 516 Federal St.
Todd, Grover C., 6357 Alderson Ave., E. E.
Tomlinson, William, Turtle Creek.
Torrens, Adelbert E., 450 Perrysville Ave., West View.
Treshler, Harry J., 646 Herron Ave.
Trevaskis, Abraham L., 508 Penn Ave., Turtle Creek.
Trevaskis, Albert R., East Pittsburgh.
Trotzky, Harvey E., 6400 Forward Ave.
Truschel, Eugene J., 207 Liberty Bank Bldg.
Tufts, Stewart W., Highland Bldg.
Turfley, George G., 2555 Center Ave.
Turnbull, Thomas, Jr., 835 Western Ave., N. S.
Turner, Hunter H., 501 Jenkins Bldg.
Ungerman, Frank G., 409 Locust St., McKeesport.
Updegraff, Harry C., 2200 Southern Ave., Carrick.
Utley, Frederick B., 1126 Highland Bldg.
Vandergrift, Earl, Mercy Hospital.
Van Horne, Thomas C., 6510 Frankstown Ave.
Van Kirk, Herbert S., 219 Sixth Ave., McKeesport.
Van Kirk, Vite E., Union Arcade.
Vates, Charles W., 803 Brownsville Road.
Vaux, Carey J., 526 Larimer Ave.
Vaux, David William, 4300 Butler St.
Vaux, George H., 5200 Liberty Ave.
Victor, Simon L., 3107 Center Ave.
Wade, Francis H., Wadehurst, Cambridge, Mass.
Wagener, Carl K., 312 Hutchinson Ave., Swissvale Sta.
Wagner, Albert A., 812 Cedar Ave., N. S.
Wagner, John H., 1519 S. Negley Ave.
Wakefield, Clark, 3420 Butler St.
Walker, Granville H., 532 Lincoln Ave., Bellevue.
Walker, William K., Westinghouse Bldg.
Wallace, James O., 7008 Jenkins Arcade.
Wallace, William C., Ingram.
Waller, Milford M., 286 Southern Ave.
Wallis, Alfred W., 125 Hazelwood Ave.
Walls, E. Slifer, Highland Bldg.
Walsh, Arthur F., Linwood Ave., Crafton.
Walters, DeForest E., 446 Atlantic Ave., McKeesport.

Walters, George W., 3222 Forbes St.
Walters, John, 316 Beaver St., Sewickley.
Walz, Frank J., Highland Bldg.
Warner, Elton S., 472 Campbell St.
Watson, Charles M., 516 Federal St., N. S.
Watson, William S., Jenkins Bldg.
Waxman, Harold E., 5819 Forbes St.
Weamer, John A., 411 Third Ave., Tarentum.
Weaver, A. Kipp, Fourth and Wood Sts., Tarentum.
Weber, John J., 2120 Carson St.
Wechsler, Benjamin B., 549 Neville St.
Wechsler, Lawrence, 207 Jenkins Bldg.
Weddell, Howard R., 219 Sixth Ave., McKeesport.
Weil, Grover C., 4704 Fifth Ave.
Weill, Nathan J., Jenkins Arcade.
Weimer, Edgar S., 1220 Highland Bldg.
Weinberg, Max H., 6079 Jenkins Arcade.
Weiner, Benjamin, 5200 Butler St.
Weiss, Edward A., Jenkins Bldg.
Weiss, Harry, Jenkins Arcade.
Weiss, Louis, 215 Electric Ave., East Pittsburgh.
Weisser, Edward A., 806 May Bldg.
Welch, John C., 679 Lincoln Ave., Bellevue.
Wertheimer, Herbert G., 2118 Westinghouse Bldg.
Wesley, William H., 6101 Penn Ave.
Westervelt, Henry C., 5306 Westminster Place.
Whitcraft, James H., 804 Wood St., Wilkinsburg.
White, Byron D., 427 Charles St.
Whitehead, Ira B., 1600 Baltimore Ave.
Wholey, Cornelius C., 818 Westinghouse Bldg.
Wiant, Meade, 7225 Kelly St.
Wible, Elmer E., Diamond Bank Bldg.
Wickerman, Earl P., 7041 Frankstown Ave.
Wiese, Archibald, 530 E. Ohio St.
Wiese, E. Robert, Ingomar.
Wignall, Horace L. W., 813 Wylie Ave.
Wiley, Joseph C., 224½ Fifth Ave., McKeesport.
Willetts, Ernest W., Diamond Bank Bldg.
Willetts, Joseph E., 5150 Jenkins Arcade.
Williams, Isadore, 2223 Carson St.
Williams, John A., 206 W. Carson St.
Williams, Roger, Liberty Bank Bldg.
Williams, Victor A., Liberty Bank Bldg.
Williamson, Adam C., 378 Lehigh Ave.
Wilson, John M., 1111 Highland Bldg.
Wilson, John V., 1332 Juniata St., N. S.
Wilson, Leyden F., 1135 Fifth Ave., New Kensington (Westmoreland Co.).
Winter, William J., 1816 East St., N. S.
Winters, George R., 112 Cohasset St.
Wirtz, Charles Wilmer, 703 E. North Ave.
Wishart, Charles A., Jenkins Arcade.
Witherspoon, Walter, Indianola, Pa.
Wivell, Raymond F., 1516 Juniata St.
Woelfel, Herbert E., 340 Lincoln Ave., Bellevue.
Wohlwend, Frederick, Tarentum.
Wolf, Jacob, Jenkins Bldg.
Wolfe, Charles H., 698 Maplewood Ave., Ambridge (Beaver Co.).
Wolff, Raymond A., 1000 Fifth Ave., New Kensington (Westmoreland Co.).
Wood, Benjamin B., 2119 Fifth Ave.
Wood, William H., Peoples Bank Bldg., Tarentum.
Woodburn, Wilton A., 415 Brushton Ave.
Woods, Edward B., Highland Bldg.
Woodward, William M., 607 Fifth Ave., McKeesport.
Worrell, John W., 110 S. Fairmount Ave.
Wright, George J., 5700 Wilkins Ave.
Wuerthele, Herman W., 161 Greenfield Ave.
Wyant, Richard P., 2812 Walnut St., McKeesport.
Wycoff, George R., 604 Chartiers Ave., McKees Rocks.
Wycoff, William A., 7211 Frankstown Ave.
Wymard, William H., 721 N. Homewood Ave.
Yorty, Valentine J., 7231 Race St.
Zabarenko, Samuel, 2322 Carson St.
Zeedick, Peter I., 1430 Columbus Ave.
Zeller, Albert T., 605 Locust St., McKeesport.
Zeok, John, 212 Eleventh St., Braddock.
Zieg, George A., 1008 Cedar Ave., N. S.
Ziegler, Charles E., 4716 Bayard St.
Zinsser, Harry F., 5134 Butler St.
Zugsmith, Edwin, Jenkins Arcade.
Zur Horst, Edward William, 1463 Green Mount Ave., Dormont.

ARMSTRONG COUNTY SOCIETY

(Organized March 28, 1876.)

President...Oren C. Campbell, Ford City.
1st V. Pres..Edward H. McClister, Kittanning.
2d V. Pres...Frederick C. Monks, Kittanning.
Sec.-Treas.
& Rept.....Jay B. F. Wyant, Kittanning.
Censors.....Andrew J. Sedwick, Kittanning.
Joseph D. Orr, Leechburg.
Jesse E. Ambler, Ford City.
Committee on Public Policy and Legislation:
Thomas N. McKee, Kittanning.
Joseph D. Orr, Leechburg.
Jesse E. Ambler, Ford City.
Official Publication: The Bulletin.
Issued Monthly.
Editor: Jay B. F. Wyant.

Stated meetings at Steim Hotel, Kittanning, first Tuesday of each month. Election of officers in January.

MEMBERS (57)

Allison, Harry W., Kittanning.
Allison, James G., McGrann.
Ambler, Jesse E., Ford City.
Ambrose, Samuel E., Rural Valley.
Aye, Thomas L., Brackenridge (Allegheny Co.).
Bierer, William J., Kittanning.
Bower, Albert E., Ford City.
Campbell, Oren C., Ford City.
Clark, Omer C., Worthington.
Cooley, John M., Kittanning.
Deemar, John T., Kittanning, R. D. 1.
Deemar, Roscoe, New Kensington (Westmoreland Co.).
Farah, William E., Yatesboro.
Fleming, Edward L., Dayton.
Furnee, Charles H., Kittanning.
Giarth, David I., Ford City.
Hargreave, James H., Kelley Station.
Heilman, Frank W., Kittanning.
Henry, Thomas J., Apollo.
Hunter, John C., Apollo.
James, John A., Yatesboro.
Keeler, Charles E., Elderton.
Kelley, James A., Whitesburg.
King, Jesse H., Worthington.
Kiser, John K., Kittanning.
Knight, George A., Kaylor.
Kroh, Laird F., Rural Valley.
Lawson, Eleanor J. Hetrick, Kittanning.
Leech, William W., Apollo.
Longwell, Benjamin J., Seminole, R. D. 1, New Bethlehem (Clarion Co.).
McCafferty, William H., Freeport.
McClister, Edward H., Kittanning.
McKee, Thomas N., Kittanning.
McLaughlin, Charles M., Freeport.
McNeil, Arthur R., Cadogen.
Mead, Ralph K., Sagamore.
Monks, Frederick C., Kittanning.
Morrow, George S., Dayton.
Newcome, Thomas H., Redbank (Clarion Co.).
Nix, William H., Furnace Run.
Orr, Joseph D., Leechburg.
Parks, Clarence C., Leechburg.
Powers, Henry K., New Kensington (Westm. Co.).

Ralston, William J., Freeport, R. D. 1.
Rogers, Charles A., Freeport.
Sedwick, Andrew, Kittanning.
Stalberg, Isaac Z., Furnace Run.
Stitt, Hugh I., Kittanning.
Stone, Henry B., 3164 W. 14th St., Cleveland, Ohio.
Summerville, Bruce B., Rimersburg (Clarion Co.).
Tarr, Robert F., Kittanning.
Townsend, A. Howard, Apollo.
Ward, James, Yatesboro.
Welsh, Howard M., Leechburg.
White, Charles A., Templeton.
Winters, Ellis C., Ford City.
Wyant, Jay B. F., Kittanning.

BEAVER COUNTY SOCIETY

(Organized Nov. 23, 1885.)

President...Francis H. McCaskey, 166 Penna. Ave., Rochester.
V. Pres.....Philip F. Martsolf, New Brighton.
Sec.-Treas....Boyd B. Snodgrass, Rochester.
Reporter....Perry Clare Smith, Ambridge.
Censors.....George J. Boyd, Beaver Falls.
Bert C. Painter, New Brighton.
Milton L. McCandless, Rochester.
Committee on Public Policy and Legislation:
George J. Boyd, Beaver Falls.
James S. Louthan, Beaver Falls.

Stated meetings held in the Welcome Club, Rochester, on the second Thursday of each month, at 3:30 p. m. Election of officers in January.

MEMBERS (62)

Ague, John B., Beaver Falls.
Allen, John J., Monaca.
Armstrong, James I., Rochester.
Aten, Ernest J., Ambridge.
Beitsch, William F., 1216 Sixth Ave., Beaver Falls.
Bernhardy, Harry W., Rochester.
Boal, G. Fay, Baden.
Boal, John H., Freedom.
Boyd, George J., Beaver Falls.
Buck, Clarence J., Beaver Falls.
Burns, Emmett S., Beaver Falls.
Cloak, Andrew B., Freedom.
Cornelius, Margaret I., Beaver.
Daugherty, Charles B., Beaver.
Elliott, Washington F., Beaver Falls.
Forcey, Charles B., Ambridge.
Gilliland, J. Frank, Beaver Falls.
Gormley, James R., Monaca.
Grazier, Harry L., Woodlawn.
Helfrich, Joseph A., Midland.
Heller, Percy K., Freedom.
Herriott, Walter H., Freedom.
Jackson, John M., Beaver Falls.
Jones, Harry B., Woodlawn.
Kirchner, Henry S., Ambridge.
Lacy, Henry C., New Brighton.
Louthan, James S., Beaver Falls.
McCandless, Milton L., Rochester.
McCaskey, Francis H., 166 Penna. Ave., Rochester.
McCormick, George L., Beaver Falls.
McGeorge, C. S., Ambridge.
McGogney, Clyde B., Midland.
McKinley, Andrew S., Monaca.
Martsolf, Philip F., New Brighton.
Mead, Harry B., New Brighton.
Meanor, William C., Beaver.
Mellott, Albert N., Ambridge.
Miller, Leroy B., New Brighton.
Moore, Chalmers B., New Galilee.
Moore, Darius C., Monaca.
Moore, Harry E., Ambridge.
Norton, Roy R., New Brighton.
Ochsenhirt, Norman C., Enon Valley.
Owens, Basil T., Woodlawn.
Painter, Bert C., New Brighton.
Patterson, Robert M., Beaver Falls.
Pearce, Albert J. B., South Heights.
Peirsol, Scudder H., Jr., Rochester.
Rose, Walter A., Rochester.
Scroggs, Joseph J., Beaver.
Shugert, Guy S., Rochester.
Simpson, Theodore P., Beaver Falls.
Smith, Perry Clare, Ambridge.
Snodgrass, Boyd B., Rochester.
Snodgrass, Bruce H., Beaver Falls.
Stevens, John A., Woodlawn.
Stevenson, John D., 377 Third St., Beaver.
Straessley, Edward C., Beaver Falls.
Strouss, Ulysses S., Beaver.
Wickham, John J., Rochester.
Wilson, Fred B., Beaver.
Wilson, Jefferson H., Beaver.

BEDFORD COUNTY SOCIETY

(Organized July 29, 1904.)

President...Walter F. Enfield, Bedford.
Sec., Treas.
& Rept....Norman A. Timmins, Bedford.
Committee on Public Policy and Legislation:
William C. Miller, Harrisburg.
Harry I. Shoenthal, New Paris.
Edmund L. Smith, Bedford.

Stated meetings bi-monthly in Bedford or in other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (15)

Ayres, Wilmot, Bedford.
Brant, Maurice V., Cairnbrook (Somerset Co.).
Brumbaugh, S. Clarence, Windber (Somerset Co.).
Campbell, Frank S., Hopewell.
Cornelius, Thorne, Riddlesburg.
Enfield, Walter F., Bedford.
Hanks, Jason G., Everett.
Miller, Abram M., Hyndman.
Miller, William C., P. O. Box 1109, Harrisburg (Dauphin Co.).
Nycum, William E., Everett.
Shoenthal, Harry I., New Paris.
Smith, Edmund L., 211 S. Juliana St., Bedford.
Stayer, Irvin C., Woodbury.
Strock, Henry B., Bedford.
Timmins, Norman A., Bedford.

BERKS COUNTY SOCIETY

(Reading is the post office when street address only is given.)

President...Winfield H. Ammarell, Birdsboro.
1st V. Pres...David S. Grim, 232 N. Sixth St.
2d V. Pres...Al[illegible]er H. Bauscher, 336 N. Fifth St.
Secretary...John E. Livingood, 249 N. Fifth St.
Treasurer...Robert M. Alexander, 544 Elm St.
Librarian...David S. Grim, 232 N. Sixth St.
Reporter...Clara Shetter-Keiser, 36 N. Tenth Street.
Censors.....Irvin H. Hartman, 237 N. Fifth St.
Daniel Longaker, 812 N. Fifth St.
Charles D. Werley, 307 S. Sixth St.
Trustees....S. Banks Taylor, 126 Oley St.
Israel Cleaver, 223 S. Fifth St.
Harry F. Rentschler, 228 N. Sixth St.
David S. Grim, 232 N. Sixth St.
Charles W. Bachman, 221 N. Sixth St.
Committee on Public Policy and Legislation:
Chas. D. Werley, 307 S. Sixth St.
Harry B. Schaeffer, Shillington.

Leon C. Darrah, 300 N. Fifth St.
Henry W. Saul, Kutztown.
Ira G. Shoemaker, 19 S. Ninth St.

Official Publication: Bulletin of the Berks County Medical Society.
Issued Monthly.
Editor: John E. Livingood, 249 N. Fifth St.

Stated meetings at Medical Hall, Reading, the second Tuesday of each month at 3 p. m. Election of officers in December.

MEMBERS (135)

Alexander, Robert M., 544 Elm St.
Allen, H. Melvin, 422 Walnut St.
Ammarell, Winfield H., Birdsboro.
Bachman, Charles W., 221 N. Sixth St.
Bagenstose, Harry W., West Reading.
Bankes, Claude W., 212 N. Sixth St.
Basler, William, West Leesport.
Bauscher, Abner H., 336 N. Fifth St.
Becker, John N., 322 N. Ninth St
Bennett, William F., State Sanatorium, Hamburg.
Bertolet, John M., 1333 Perkiomen Ave.
Bertolet, Walter M., 141 N. Fifth St.
Bertolet, William S., 233 N. Sixth St.
Bertolette, Daniel N., 127 S. Sixth St.
Borneman, John S., Boyertown.
Bower, John L., Broad St. Station P. R. R., Philadelphia (Phila. Co.).
Britton, Harry A., 351 N. Fifth St.
Brunner, H. Philemon, 122 Oley St.
Brunner, Stanley A., Krumsville.
Bucher, Hiester, 142 S. Fifth St.
Burkholder, Samuel G., 613 Walnut St.
Cahn, Morris L., 551 N. Eleventh St.
Cantough, Charles S., 322 N. Fifth St.
Cleaver, Israel, 223 S. Fifth St.
Colletti, Ferdinando, 15 N. Fourth St.
Darrah, Leon C., 300 N. Fifth St.
DeLong, Eugene R., Geiger's Mills.
Dietrich, Charles J., 206 W. Oley St.
Dries, Charles L., Eshbach.
Dunkelberger, Nathaniel Z., Kutztown.
Fahrenbach, George W., Bernville.
Feick, John F., 643 N. Ninth St.
Fisher, William E., 151 W. Buttonwood St.
Fitzgerald, Lawrence, Temple.
Fox, Oscar E., 232 N. Fifth St.
Frankhauser, Fremont W., 6 N. Ninth St.
Frederick, Le Roy W., 418 N. Tenth St.
Gable, Frank J., 104 S. Fourth St.
Gearhart, Malcolm Z., 330 N. Fifth St.
Gehris, Oscar T., Fleetwood.
Gerhard, James R., 540 Center Ave.
Gorman, Leo R., 522 N. Tenth St.
Griesemer, Wellington D., 1216 Perkiomen Ave.
Grim, David S., 232 N. Sixth St.
Gruver, Martin E., 247 N. Fifth St.
Hain, Ira J., 1119 N. Ninth St.
Harding, Ralph A., 152 Douglas St.
Hartman, Irvin H., 237 N. Fifth St.
Haws, Ralph J., 150 N. Sixth St.
Henderson, Robert J., 518 Franklin St.
Henry, Charles P., 201 Am. Cas. Bldg., Sixth and Washington Sts.
Hertzog, C. Frank, Oley.
Hetrich, George, Birdsboro.
Hiester, William L., 1148 Perkiomen Ave.
High, Isaac B., 1717 S. Conestoga St., Phila. (Phila. Co.).
Hill, Samuel S., Wernersville.
Hirshland, Harold, 1019 Penn St.
Horn, John H., Womelsdorf.
Hunsberger, William E., Maiden Creek.
Huyett, M. Luther, 334 N. Fifth St.
Isenberg, Alfred P., 141 W. Greenwich St.
Jameson, William B., Sanatorium, Hamburg.
Kaucher, Clifford L., Colonial Trust Bldg.
Kauffman, John W., 814 N. Eleventh St.
Kehl, George W., 313 N. Fifth St.
Keiffer, Elmer C., 900 N. Fifth St.
Kistler, Chester K., 800 Franklin St.
Knoll, Frederick W., 754 N. Tenth St.
Krick, William F., 340 N. Fifth St.
Kurtz, J. Ellis, 22 S. Fifth St.
Lebkicher, Wellington A., 25 S. Fifth St.
Lechner, Leroy Y., Bechtelsville.
LeFevre, Rufus E., 138 S. Eighth St.
Leinbach, Howard Milton, 323 N. Fifth St.
Leiser, William, III, 336 N. Ninth St.
Lerch, Charles E., Wyomissing.
Levan, George K., 300 S. Fifth St.
Light, Israel K., 350 N. Sixth St.
Livingood, John E., 249 N. Fifth St.
Livingood, Louis J., Womelsdorf.
Livingood, William W., Robesonia.
Long, William S., 208 N. Sixth St.
Longaker, Daniel, 812 N. Fifth St.
Loose, Charles G., 120 N. Fifth St.
Lytle, Frank P., Birdsboro.
Matternes, James G., Sinking Spring.
Meter, Edward G., 948 Penn St.
Miller, Howard U., Mount Penn.
Moyer, Donald G., 1153 Penn Ave., Wyomissing.
Muhlenberg, Heister H., 34 S. Fifth St.
Orff, John Henry, Wyomissing.
Overholser, George W., 309 N. Ninth St.
Potteiger, George F., Hamburg.
Rager, Samuel E., Kutztown.
Reber, Conrad S., 548 Penn Ave., West Reading.
Reber, Ralph L., 147 N. Fourth St.
Reeser, Howard S., 111 S. Fifth St.
Rentschler, Harry F., 228 N. Sixth St.
Rhode, Homer J., 220 N. Sixth St.
Rorke, John H., 342 N. Fifth St.
Rothermel, Lewis R., Shillington.
Runyeon, Frank G., 1361 Perkiomen Ave.
Saul, Henry W., Kutztown.
Schaeffer, Harry B., Shillington.
Schlappich, Charles E., Birdsboro.
Schlemm, Horace E., 25 S. Fifth St.
Schmehl, Seymour T., 717 Washington St.
Scholten, Ernest R., 909 N. Fifth St.
Shearer, Christopher H., 206 N. Fifth St.
Shearer, Wayne L., 101 W. Greenwich St.
Shenk, George R., 116 S. Ninth St.
Shetter-Keiser, Clara, 36 N. Tenth St.
Shoemaker, Ira G., 19 S. Ninth St.
Smith, Charles F., Topton.
Sondheim, Sidney J., 1044 N. Tenth St.
Stamm, Allison A., Mohnton.
Stites, Thomas H. A., R. D. 3, Nazareth (Northampton Co.).
Stockler, Joseph, 249 N. Fifth St.
Taylor, S. Banks, 126 Oley St.
Wagner, Jesse L., 152 N. Sixth St.
Wagner, John R., Hamburg.
Wagner, Levi F., 610 N. Tenth St.
Wanner, Abram K., 121 N. Fourth St.
Wanner, H. Herbert, 1533 Perkiomen Ave.
Way, Leland F., 220 N. Fifth St.
Wenger, LeRoy J., 25 S. Fifth St.
Wenrich, George G., Grandview Sanatorium, Wernersville.
Wenrich, John Adam, Grandview Sanatorium, Wernersville.
Werley, Charles D., 307 S. Sixth St.
Werley, Walter W., 309 S. Sixth St.
Wheeler, Lucia Anna, State Hospital, Wernersville.
Wickert, Victor W., 1009 Penn St.
Winston, Gilbert L., 344 N. Fifth St.
Womer, Frank, 216 N. Sixth St.
Ziegler, John G., Lt. C., M. C., U. S. N., 5729 Colorado Ave., N. W., Washington, D. C.

BLAIR COUNTY SOCIETY

(Organized July 25, 1848.)

(Altoona is the post office when street address only is given.)

President...Walter S. Musser, Tyrone.
1st V. Pres..Logan E. Hull, 1219 Thirteenth Ave.
2d V. Pres...John H. Galbraith, 1123 Thirteenth Ave.
Sec.-Treas...Charles F. McBurney, 604 Ninth St.
Cor. Sec. & Rept......James S. Taylor, 1107 Thirteenth Ave.
Censors.....James E. Smith, 410 Fourth St.
Samuel L. McCarthy, 1205 Fourteenth Ave.
W. Albert Nason, Roaring Spring.
Committee on Public Health and Legislation:
James E. Smith, 410 Fourth St.
Henry H. Brotherlin, Hollidaysburg.
W. Albert Nason, Roaring Spring.
Official Publication: Blair County Medical Bulletin. Issued Monthly.
Editors: James S. Taylor, 1107 Thirteenth Ave.
Richard S. Magee, 1320 Ninth St.
Charles F. McBurney, 604 Ninth St.

Stated meetings held in Community Hall, City Building, Altoona, the fourth Tuesday of each month except September, in which month meeting is held on third Thursday at 3 p. m.

MEMBERS (87)

Alleman, George E., 2314 Broad Ave.
Allen, David E., 1325 Eighth Ave.
Bliss, Gerald D., 1220 Thirteenth Ave.
Bloomhardt, Fred H., Lt. Col., Camp Benning, Ga.
Blose, Joseph U., 401 Howard Ave.
Bonebreak, John S., Martinsburg.
Bradin, Carey C., Tyrone.
Brotherlin, Henry H., Hollidaysburg.
Brubaker, John L., Juniata.
Brumbaugh, Arthur S., 1405 Tenth St.
Burket, Clair W., 523 Fourth St.
Calvin, Webster, 510 Allegheny St., Hollidaysburg.
Confer, D. Clarence, Duncansville.
Crawford, Luther Fleck, Tyrone.
Davies, Sarah M., 1307 Twelfth Ave.
Delaney, Charles W., Altoona Trust Bldg.
Eldon, Roswell T., 1624 Eleventh Ave.
Findley, Joseph D., 1123 Thirteenth Ave.
Frye, J. Clarence, Williamsburg.
Galbraith, John H., 1123 Thirteenth Ave.
Gettemy, Ralston O., 310 Fourth St.
Glasgow, David Fulkerson, Tyrone.
Glover, Samuel P., 1118 Twelfth Ave.
Gracchelli, Peter, 1324 Eighth Ave.
Grounds, Wilbert L., Roaring Spring.
Haberacker, Eugene O. M., 2222 Seventh Ave.
Hair, Wilfred L., Roaring Spring.
Handwork, Andrew Jackson W., 1320 Ninth St.
Hendricks, Charles S., 508 Second St., Juniata.
Hershberger, James W., Martinsburg.
Hillis, Robert J., N. W. Cor. Fourth Ave. and Sixth St., Juniata.
Hogue, John D., 1107½ Thirteenth Ave.
Hoover, Ernest J., 2318 Eighth Ave.
Howell, William H., 1117 Twelfth Ave.
Hull, Logan E., 1219 Thirteenth Ave.
Isenberg, Joseph L., Williamsburg.
Johnston, Charles O., Claysburg.
Jones, Henry O., 1325½ Twelfth Ave.
Kauffman, David, 1116 Twelfth Ave.
Keagy, Frank, 401 Fourth Ave.
Kech, Augustus Sheridan, 1410 Twelfth Ave.
Levengood, Brooklyn B., Bellwood.
Loudon, Edward W., 3945 Burgoin Road.
Lowrie, William L., Tyrone.
McBurney, Charles F., 604 Ninth St.
McCarthy, Samuel L., 1205 Fourteenth Ave.
McKee, Louis E., 1104 Thirteenth Ave.
McNaul, Caleb G., Juniata.
Magee, Richard S., 1320 Ninth St.
Meminger, William H., Juniata.
Metzgar, Carl H., 1424 Twelfth Ave.
Miller, Edwin B., 1903 Seventh Ave.
Miller, Homer C., 1202 Sixteenth St.
Moffitt, Harold F., 922 Seventeenth St.
Montgomery, Chalmers, Box 547.
Morrow, Emory H., 1506 Thirteenth Ave.
Morrow, J. Robert, 941 Seventeenth St.
Musser, Walter Scott, Tyrone.
Nason, John B., Tyrone.
Nason, W. Albert, Roaring Spring.
Neff, Elmer E., 813 Eighth Ave.
Noss, Charles W., 1118 Seventh Ave.
Oburn, Albert S., 701 Seventh Ave.
Otterbein, Frederick, 324 Sixth Ave.
Pershing, Paul Frederick, 1203 Seventh Ave.
Preston, Waldo E., Hollidaysburg.
Reith, Emil, Central Trust Bldg.
Replogle, Henry B., 616 Fourth St.
Robinson, William H., Roaring Spring.
Robison, Clair E., 930 Seventeenth St.
Shultz, Charles Lytle, 3613 Woodland Ave., Phila. (Phila. Co.).
Smith, James E., 410 Fourth St.
Snyder, Claude Edwin, 831 Sixth Ave.
Snyder, John R. T., 404 Howard Ave.
Sommer, Henry J., Jr., Blair County Hospital, Hollidaysburg.
Spanogle, Albert L., 1226 Seventh Ave.
Stayer, Andrew S., Carlisle Barracks, Carlisle.
Stonebreaker, Samuel L., Tyrone.
Tate, George F., 26 S. Beaver St., York (York Co.).
Taylor, James S., 1107 Thirteenth Ave.
Taylor, S. Paul, 1107 Thirteenth Ave.
Thomas, Herbert C., 2413 Broad Ave.
Walton, Louis S., Central Trust Bldg
Watson, James G., Juniata.
West, Harry W., 1905 Eighth Ave.
Whittaker, Ralph R., Williamsburg.
Wilson, Thomas L., Bellwood.

BRADFORD COUNTY SOCIETY

(Organized Sept. 20, 1849.)

President...Howard C. Down, Towanda.
1st V. Pres..Grant H. Gustin, Sylvania.
2d V. Pres...George W. Hawk, Sayre.
Sec.-Rept...Cyrus Lee Stevens, Athens.
Treasurer...Charles M. Woodburn, Sayre.
Censors.....C. Melvin Coon, Athens.
Alpheus E. Dann, Canton.
Arthur J. Bird, New Albany.
Committee on Public Health Legislation:
Donald Guthrie, Sayre.
Mahlon B. Ballard, Troy.
Cyrus Lee Stevens, Athens.
Executive Committee:
Howard C. Down, Towanda.
Cyrus Lee Stevens, Athens.
C. Manville Pratt, Towanda.

Stated meetings the second Tuesday of each month at 1:30 p. m., in the Court House, Towanda, unless otherwise ordered. Election of officers in January.

MEMBERS (49)

Ballard, Mahlon B., Troy.
Barker, Perley N., Troy.
Bevan, Daniel L., Leroy.
Bird, Arthur J., New Albany.
Boyer, George E., Troy.
Carpenter, Philo S., Laquin.
Chamberlain, John W., Wyalusing.
Conklin, Gustavus, Orwell.

Conklin, Stanley D., Sayre.
Coon, C. Melvin, Athens.
Coughlin, Alfred G., Athens.
Daly, John Edward, Ulster.
Dann, Alpheus E., Canton.
Davison, Willis T., Canton.
DeWan, Charles H., Sayre.
Down, Howard C., Towanda.
Durga, Gideon W., LeRaysville.
Everitt, John E., Sayre.
Glover, Henry A., Nichols, N. Y.
Gustin, Grant H., Sylvania.
Guthrie, Donald, Sayre.
Haines, Carlyle N., Sayre.
Haines, Charles A., Sayre.
Haines, John F., Monroeton.
Harshberger, W. Frank, New Albany.
Hawk, George W., Sayre.
Higgins, John M., Sayre.
Inslee, Fayette Lane, LeRaysville.
Johnson, Thomas B., Towanda.
Johnson, T. Benj., Jr., Towanda.
Kenyon, Charles L., Monroeton.
LaPlant, Hiram D., Sayre.
Lee, John C., Wyalusing.
Lundblad, Walter E., 116 E. Sixty-Third St., N. Y.
Means, Charles S., Towanda.
Moyer, Walter S., Sayre.
Parks, Arthur Lloyd, Rome.
Parsons, James W., Canton.
Person, Russell H., Athens.
Phillips, John W., Troy.
Pratt, C. Manville, Towanda.
Pratt, D. Leonard, Towanda.
Reed, Charles, Towanda.
Rice, Frederick W., Sayre.
Schwartz, Philip H., Towanda.
Stevens, Cyrus Lee, Athens.
Sumner, Porter H., Camptown.
Weinberger, Nelson S., Sayre.
Woodburn, Charles M., 99 Main St., Binghamton, N. Y.

BUCKS COUNTY SOCIETY

(Organized June 14, 1848. Reorganized Oct. 31, 1862.)

President...Elmer E. Pownall, Richboro.
1st V. Pres..Roscoe C. Magill, Newhope.
2d V. Pres...John A. Weierbach, Quakertown.
Sec.-Treas...Anthony F. Myers, Blooming Glen.
Censors.....Geo. M. Grim, Ottsville.
Wm. R. Cooper, Point Pleasant.
Howard Pursell, Bristol.
Committee on Public Policy and Legislation:
J. Fred Wagner, Bristol.
Alfred E. Fretz, Sellersville.
Roscoe C. Magill, Newhope.
Official Publication: Bucks County Monthly.
Issued Monthly.
Editor: Anthony F. Myers, Blooming Glen.

Stated meetings at 12 m., the second Wednesday in February at Newton; in May at Bristol; in August at Quakertown; in November at Doylestown. Election of officers in November.

MEMBERS (76)

Abbott, Charles Shewell, 705 Radcliffe St., Bristol.
Abbott, Joseph de Benneville, Bristol.
Althouse, Albert C., Dublin.
Bassett, Henry Linn, Yardley.
Biehn, Andrew C., Quakertown.
Boring, H. Bruce, Richlandtown.
Brewer, George N., Plumsteadville.
Brown, Walter H., 49 W. Second St., Mansfield, Ohio.
Burkhardt, Charles N., Chalfont.
Bush, Irvine R., 339 Dorrance St., Bristol.
Carrell, John B., Hatboro (Montgomery Co.).
Collins, James, 557 Bath St., Bristol.
Cooper, William R., Point Pleasant.
Cope, F. Gurney, Upper Black Eddy.
Crewitt, John A., Newtown.
Crouthamel, Joseph F., Souderton (Montgomery Co.).
Enion, George A., Morrisville.
Erdman, William S., Buckingham.
Erdman, Wilson S., Quakertown.
Everts, Edward E., 325 N. Bellevue Ave., Langhorne.
Feigley, Harvey P., Quakertown.
Fell, John A., Doylestown.
Fleckenstine, Horace, Newportville.
Fox, George T., 303 Radcliffe St., Bristol.
Fretz, Alfred E., Sellersville.
Fretz, Clayton D., Sellersville.
Fretz, Oliver H., Quakertown.
Grim, George M., Ottsville.
Grim, Herman C., Trumbauersville.
Hellyer, Howard A., Penns Park.
Hennigh, George B., Perkasie.
Huff, Irwin F., Sellersville.
Huntsman, Edwin S., Hulmeville.
Johnson, Erwin T., Hilltown.
Jourdan, Victor J. P., 229 Washington Ave., Bristol.
Klenk, James M., Tullytown.
LeCompte, William C., 430 Radcliffe St., Bristol.
Lehman, Frank, 316 Radcliffe St., Bristol.
Leiby, Raymond A., Newhope.
Leinbach, Samuel A., Quakertown.
Lovett, Henry, Langhorne.
MacKenzie, Arthur L., Eddington.
McIlhatten, Samuel Patterson, Ivyland.
Magill, Roscoe C., Newhope.
Moyer, William G., Quakertown.
Murphy, Felix A., Doylestown.
Myers, Anthony F., Blooming Glen.
O'Connell, Austin, Bucksville.
Osborne, Richard H. G., 2227 Lincoln Way, San Francisco, California.
Packer, Jesse E., Newtown.
Parker, George A., Jr., Newtown.
Paulus, Clarence A., Telford.
Peters, Byron M., Jenkintown (Montgomery Co.).
Pownall, Elmer E., Richboro.
Pursell, Howard, 200 Mill St., Bristol.
Ridge, Samuel LeRoy, Langhorne.
Roberts, Linford B., Wycombe.
Smith, Charles B., Newtown.
Smith, Edwin L., Hatboro (Montgomery Co.).
Stoumen, Samuel, Springtown.
Strouse, Otto H., Perkasie.
Swartzlander, Frank B., Doylestown.
Swartzlander, Joseph R., Doylestown.
Sweeney, John J., Doylestown.
Wagner, James, 431 Radcliffe St., Bristol.
Walter, Charles A., Glenside (Montgomery Co.).
Walter, J. Willis, Point Pleasant.
Walton, Levi S., Jenkintown (Montgomery Co.).
Wareham, Arthur, Morrisville.
Watson, Franklin, Willow Grove.
Webb, Harvey D., 316 Radcliffe St., Bristol.
Weierbach, John A., Quakertown.
Weisel, William F., Quakertown.
Wilkinson, William J., Sellersville.
Williams, Neri B., Perkasie.
Windber, Lawrence J., Andalusia.

BUTLER COUNTY SOCIETY

(Organized Jan. 3, 1867.)

(Butler is the post office when street address only is given.)

President...John V. Cowden, 228 S. Main St.
1st V. Pres..Willis A. McCall, 215 S. Main St.
2d V. Pres...Olin A. Williams, 128 S. Main St.
Sec.-Rept....L. Leo Doane, Reiber Bldg.

Treasurer...M. Edward Headland, 216 Center Ave.
Librarian...Robert B. Greer, 371 N. Main St.
Censors.....William B. Clark, 135 S. Main St.
Ephriam E. Campbell, 111 S. Main St.
James L. Christie, Petersville.
Committee on Public Policy and Legislation:
J. Clinton Atwell, 315 N. Main St .
Elgie L. Wasson, Co. Natl. Bank Bldg.

Stated meetings in the University Club Rooms, Campbell Building, Butler, the second Tuesday in each month at 8:30 p. m. Election of officers in January.

MEMBERS (50)

Armstrong, William J., 330 N. Main St., Butler.
Atwell, J. Clinton, 315 N. Main St.
Beatty, George M., Chicora.
Boyle, James C., 121 E. Cunningham St.
Brandberg, Guy A., 358 Center Ave.
Campbell, Ephraim E., 111 S. Main St.
Campbell, John S., Portersville.
Campbell, William B., Prospect.
Christie, James L., Petersville.
Christie, Ralph, Conoquenessing.
Clark, William B., 135 S. Main St.
Cowden, John V., 228 S. Main St.
DeLong, Francis E., Boyers.
DeWolfe, William L., 207 S. McKean St.
Doane, L. Leo, Reiber Bldg.
Dombart, Nicholas A., Evans City.
Dunkle, John M., 119 Diamond St., E.
Elrick, Robert B., Petrolia.
Fulton, Samuel R., Harrisville.
Greer, Robert B., 371 N. Main St.
Grossman, Robert J., 408 Center Ave.
Grossman, William J., 312 W. Jefferson St.
Hazlett, Leslie R., Box 643.
Headland, M. Edward, 216 Center Ave.
Hockenberry, W. Rush, Slippery Rock.
Imbrie, Clarence E., 327 N. Main St.
Lasher, Weston W., Saxonburg.
McCall, Willis A., 215 S. Main St.
McClelland, Charles S., Butler.
Maxwell, Thomas McCullough, 214 W. Cunningham St.
Mershon, Edwin U. B., Saxonburg.
Mortimer, Earle L., Box 146, Petrolia.
Padilla, Alfonso M., 315 N. Main St.
Purvis, Joseph D., 128 S. Main St.
Quigley, James E., Butler.
Robb, Claude A., 138 N. Main St.
Scott, William McC., Marwood.
St. Clair, Mary P. Brooke, 128 S. Main St.
Stackpole, Ray L., Reiter Bldg.
St. Clair, Harry P., 213 S. Main St.
Simpson, Egbert R., 213½ S. Main St.
Stepp, Lawrence H., Mars.
Stewart, Arthur I., Harmony.
Walker, Ralph, Main and Diamond St.
Wasson, Elgie L., Co. Natl. Bank Bldg.
Whittaker, Arthur E., Zelienople.
Williams, Olin A., 128 S. Main St.
Wilson, Harry M., Evans City.
Young, Clinton M., Queens Junction.
Ziegler, Alfred Henry, 112 Washington St.

CAMBRIA COUNTY SOCIETY

(Organized 1852. Reorganized 1868 and 1882.)

(Johnstown is the post office when street address only is given.)

President...Harry H. Penrod, 409 Vine St.
1st V. Pres..Edward Pardoe, South Fork.
2d V. Pres...Frank G. Scharmann, 411 Main St.
Sec.-Treas...Joseph J. Meyer, 425 Lincoln St.
Censors.....William O. Lubken, Vine and Franklin Sts.
Harry J. Cartin, 331 Lincoln St.
Guy R. Anderson, Barnesboro.
Committee on Public Policy and Legislation:
Olin G. A. Barker, 804 Johnstown Trust Bldg.
Harry M. Stewart, 406 Main St.
John W. Barr, Swank Bldg.
Committee on Health and Public Instruction:
Harry J. Cartin, 331 Lincoln St.
Frank U. Ferguson, Gallitzin.
Robert J. Saegerson, 340 Lincoln St.
Program and Executive Committee:
Harry H. Penrod, 409 Vine St.
Joseph J. Meyer, 425 Lincoln St.
William O. Lubken, Vine and Franklin Sts.
Official Publication: The Medical Comment.
Issued Monthly.
Editor: Joseph J. Meyer, 425 Lincoln St.

Stated meetings every second Thursday at 8:30 p. m., at Ellis Building, Main and Market Sts., Johnstown. Officers elected in December and installed in January.

MEMBERS (130)

Anderson, Guy R., Barnesboro.
Arble, Ellsworth F., Carrolltown.
Baback, Martin E., 123 Broad St.
Bancroft, John Walter, 410 Lincoln St.
Barbouhr, Michael A., Mercy Hospital.
Barker, Olin G. A., 804 Johnstown Trust Bldg.
Barnett, George W., 414 Lincoln St.
Barr, John W., Swank Bldg.
Basil, Arthur A., 219 Market St.
Beatty, Arthur W., Colver.
Bennett, Harry J., Ebensburg.
Benshoff, Arthur M., 506 Thirteenth St., Windber (Somerset Co.).
Bergstein, Alfred M., Gallitzin.
Bishop, Frank G., Ebensburg.
Blair, Walter A., Spangler.
Boucher, Samuel D., Portage.
Bowers, Benjamin F., St. Benedict.
Bowman, Kent A., 237 Market St.
Boyer, Edwin C., 244 Market St.
Brallier, Stanley A. E., 312 Green St., Conemaugh.
Braude, Bennett A., 338 Locust St.
Brinham, Alfred W., Scalp Level.
Burkhart, Ephraim J., 189 Fairfield Ave.
Buzzard, Josiah F., Portage.
Cartin, Harry J., 331 Lincoln St.
Claybourne, Moses, 364 Bedford St.
Cleaver, Philip R., Johnstown Trust Bldg.
Conrad, Earl K., 514 Franklin St.
Cowen, Melvin E., Sanitarium, Cresson.
Curtis, Kim D., Revloc.
Custer, Charles C., State Sanatorium, Cresson.
Davis, Robert C., 413 Locust St.
Davison, Seward R., 236 Market St.
Dickinson, E. Pope, St. Michael.
Difenderfer, Herman G., Beaverdale.
Donlan, Francis A., Lilly.
Dunnick, Milton C., Nanty Glo.
Dunsmore, Albert F., Barnesboro.
Ealy, Edwin T., Barnesboro.
Ferguson, Frank U., Gallitzin.
Fichtner, Albon Ellsworth, First St., Conemaugh.
Fichtner, Albon S., 119 F St.
Fisher, Daniel E., Needmore (Fulton Co.).
Fitzgerald, Clyde A., South Fork.
Garman, Harry F., Emeigh.
Gearhart, Sylvester C., Blandburg.
Geissler, Elmer E., Nanty Glo.
George, William J., 305 Pine St.
Ginsburg, Louis, 435 Franklin St.
Gockley, Harry F., South Fork.
Griffith, Harvey M., 431 First St., Conemaugh.
Griffith, William S., 600 Franklin St.

Grove, William E., 406 Main St.
Gurley, Lycurgus M., City Hall Square.
Hall, Perry O., Lilly.
Hannan, Charles E., 531 Locust St.
Harris, Clarence M., 604 Johnstown Trust Bldg.
Hay, George, 344 Locust St.
Hays, Charles Elliott, Johnstown Trust Bldg.
Healey, Bernard C., Barnesboro.
Helfrich, T. Orlando, Spangler.
Helsel, William L., Scalp Level.
Hill, Homer L., 1311 Franklin St.
Hornick, Leo W., 536 Vine St.
Horowitz, Max, 402 Broad St.
Jefferson, James, 415 Locust St.
Jones, Emlyn, 207½ Market St.
Jones, Leighton Wherry, 434 Lincoln St.
Keffer, Winter O., Frugality.
Keiper, Jacob D., First Nat. Bank Bldg.
Kelly, Patrick J., Patton.
Kress, Frederick C., 436 Franklin St.
Kring, Sylvester S., Johnstown Trust Bldg.
Leech, A. Wallace, Beaverdale.
Livingston, Frank J., Salix.
Longwell, Benton Elkins, 441 Locust St.
Lowman, John Bodine, 114 Market St.
Lubken, William Oscar, Vine and Franklin Sts.
Lynch, James A., Cresson.
McAneny, John B., 115½ Broad St.
McCoy, Clayton L., Hastings.
Martin, George, 445 First St., Conemaugh.
Matthews, William E., 425 Lincoln St.
Mayer, Louis H., Jr., 228 Market St.
Mayer, William F., 228 Market St.
Mendenhall, Thomas E., "The Rocks."
Meyer, Joseph J., 425 Lincoln St.
Miller, Harry H., 245 Ohio St.
Millhoff, Clarence B., 646 Franklin St.
Miltenberger, Arthur, 248 Market St.
Monahan, James J., 29-31 South Jardin St., Shenandoah, (Schulykill Co.).
Murray, John A., Patton.
Murray, Valesius A., Patton.
Murray, William J., 225 Market St.
Nickel, Harry G., 345 Park Avenue.
O'Connor, James Joseph, 706 Hemlock St., Gallitzin.
Palmer, Robert M., 344 Lincoln St.
Pardoe, Edward, South Fork.
Penrod, Harry Hartzell, 409 Vine St.
Porch, Latchaw Lynn, 221 Broad St.
Powelton, Darwin T., 530 Vine St.
Prideaux, Harry T., Cresson.
Prideaux, William A., Expedit.
Pringle, William N., 413 Locust St.
Ray, Daniel Pattee, 441 Vine St.
Raymond, Walter C., 528 Franklin St.
Reddy, William J., 225 Main St.
Replogle, Joseph P., Porch Bldg.
Rice, Daniel, Ebensburg.
Rush, Calvin C., 342 Main St.
Sagerson, John Leo, 431 Lincoln St.
Sagerson, Robert J., 340 Lincoln St.
Salus, Henry W., 420 Franklin St.
Saul, Ray D., 191 Lunen St.
Scharmann, Frank G., 411 Main St.
Schill, Francis, 111 Jackson St.
Schilling, Francis M., 923 Second Ave., Westmount, Johnstown.
Schultz, Merritt B., 150 Village St.
Shank, Orlando J., Windber (Somerset Co.).
Sloan, Ira E., 520 Fronheiser St.
Somerville, Harry, Chest Springs.
Spicher, Clarence C., 566 Park Ave.
Stayer, Maurice, 217 Fairfield St.
Stewart, Harry Myrrell, 406 Main St.
Sunseri, Filippe, Washington and Clinton Sts.
Thompson, Lewis R., Ehrenfeld.
Tomb, Henson F., 132 Jackson St.
Turnbull, William G., Cresson.
Wheeling, William S., Windber (Somerset Co.).
Woodruff, John B., Vine and Market Sts.

CARBON COUNTY SOCIETY

(Organized April 20, 1881.)

President...*Jacob H. Behler, Nesquehoning.
1st V. Pres..Joseph J. Bellas, Lansford.
2d V. Pres...Robert A. Christman, Weissport.
Sec.-Treas...Jacob A. Trexler, Lehighton.
Censor......Edward F. Eshleman, Palmerton.

Stated meetings are held at Mauch Chunk and Lehighton the third Wednesday at 3 p. m., of January, March, May, July, September and November. Election of officers in November.

MEMBERS (28)

Armstrong, Alexander, White Haven (Luzerne Co.).
Balliet, Calvin J., Lehighton.
Batchelor, Roger P., Palmerton.
Bellas, Joseph J., Lansford.
Bray, Edward G., East Mauch Chunk.
Christman, Robert A., Weissport.
Dreibelbis, David F., Lehighton.
Druckenmiller, Stanley F., Lansford.
Eshleman, Edward F., Palmerton.
Freyman, Ira E., Weatherly.
Haberman, Charles P., Weissport.
Henry, John K., Mauch Chunk.
Hoffmeier, Howard T., Mauch Chunk.
Horn, Charles T., Lehighton.
Kasten, William H., Lansford.
Kistler, Clinton J., Lehighton.
Kistler, Edwin H., Lansford.
Kistler, Robert N., Lansford.
Long, Wilson P., Weatherly.
McDonald, John J., Nesquehoning.
Quinn, John J., Lansford.
Rupp, Roger R., Lehighton.
Sittler, Albert M., Bowmanstown.
Sittler, Warren C., Lehighton, R. D. 1.
Trexler, Jacob A., Lehighton.
Wasser, John E., East Mauch Chunk.
Young, J. Harrington, Lansford.
Zern, Jacob G., Lehighton.

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*Deceased.

CENTER COUNTY SOCIETY

(Organized April 4, 1876.)

President...Oscar W. McEntire, Howard.
1st V. Pres..James C. Rogers, Bellefonte.
2d V. Pres...William S. Glen, Jr., State College.
Sec.-Treas..Melvin Locke, Bellefonte.
Reporter....James L. Seibert, Bellefonte.
Committee on Public Policy and Legislation:
David Dale, Bellefonte.
Melvin Locke, Bellefonte.
Marvin W. Reed, Bellefonte.
Censors.....Peter H. Dale, State College.
James R. Bartlett, R. F. D., Bellefonte.
Joseph P. Ritenour, State College.

Stated meetings the second Wednesday of each month at 10:30 a. m., in the Court House, Bellefonte. Election of officers in January.

MEMBERS (26)

Allison, John R. G., Millheim.
Bartlett, James R., R. F. D., Bellefonte.
Braucht, Harvey S., Spring Mills.
Brockerhoff, Joseph M., Bellefonte.
Dale, David, Bellefonte.
Dale, Peter Hoffer, State College.

Frank, George S., Millheim.
Glenn, Grover Cleveland, State College.
Glenn, William S., Sr., State College.
Glenn, William S., Jr., State College.
Harris, Edward H., Snow Shoe.
Irwin, William U., Bellefonte.
Kidder, Lincoln E., State College.
Kurtz, Walter J., Howard.
Locke, Le Roy, Fleming.
Locke, Melvin, Bellefonte.
Longwell, Harold H., Center Hall.
McEntire, Oscar W., Howard.
Musser, C. Sumner, Aaronsburg.
Reed, Marvin W., Bellefonte.
Ritenour, Joseph P., State College.
Russell, Edward A., Fleming.
Sebring, John, Bellefonte.
Seibert, James L., Bellefonte.
Woods, George H., Pine Grove Mills.
Young, Robert J., Snow Shoe.

CHESTER COUNTY SOCIETY

(Organized Feb. 5, 1828.)

President...William W. Betts, Chadds Ford.
1st V. Pres..Willis N. Smith, Phœnixville.
2d V. Pres...W. Wellington Woodward, West Chester.
Sec.-Treas...Joseph Scattergood, West Chester.
Reporter....Henry Pleasants, Jr., West Chester.
Censors.....Charles E. Woodward, West Chester.
Edward Kerr, East Downingtown.
S. Horace Scott, Coatesville.
Exec. Com..William W. Betts, Chadds Ford (Delaware Co.).
Howard Y. Pennell, East Downingtown.
Joseph Scattergood, West Chester.
Official Publication: The Medical Reporter.
Issued Monthly.
Editor: William T. Sharpless, West Chester.

Stated meetings at 3:15 p. m. on the third Tuesday of each month at West Chester. Election of officers in January.

MEMBERS (75)

Aiken, Thomas Gerald, Berwyn.
Betts, William W., Chadds Ford (Delaware Co.).
Brower, Charles J., Spring City.
Bullock, Charles C., West Chester.
Cassel, Wilbur F., Spring City.
Catanach, Norman G., West Chester.
Cressman, George S., Pughtown, R. D., Spring City.
Davis, Howard B., Downingtown.
Davis, John H., Coatesville.
Dietrich, George E., Coatesville.
Evans, John K., Malvern.
Ewing, William B., West Grove.
Farrell, John A., West Chester.
Francis, William G., Coatesville.
Gifford, U. Grant, Kennett Square.
Halcombe, Guy T., Oxford.
Hall, Katherine S., R. D. 5, West Chester.
Hamilton, William L., Malvern.
Hammers, James S., Embreeville.
Heagey, Henry F. C., Cochranville.
Heck, George W., Coatesville.
Hemphill, Joseph, Jr., West Chester.
Hughes, Robert C., Paoli.
Hutchinson, D. Edgar, East Downingtown.
Jacobs, Francis B., 102 S. High St., West Chester.
Johnson, J. Huston, Glen Moore.
Kerr, Edward, East Downingtown.
Kerwin, Charles M., 305 F. and M. Bldg., West Chester.
Keylor, Josiah B., Cochranville.
Klevan, Oscar Jesse, 212 West Miner St., West Chester.
Kurtz, Clarence S., Malvern.
Kyle, E. V., Parkesburg.
McKinstry, Herbert S., Kennett Square.
Magraw, George T., Avondale.
Margolies, Michael, Coatesville.
Maxwell, James Rea, Parkesburg.
Mellor, Howard, West Chester, R. D.
Mercer, Mifflin W., Downington.
Merryman, John W., Kennett Square.
Palmer, Charles R., West Chester.
Patrick, Jesse K., West Chester.
Pennell, Howard Y., East Downingtown.
Perdue, William R., West Chester, R. D. 5.
Perkins, J. Ashbridge, Coatesville.
Pleasants, Henry, Jr., West Chester.
Porter, Henry E., Coatesville.
Pratt, C. Ira, Coatesville.
Pratt, John S. M., Coatesville.
Reeder, Jeremiah V., Phoenixville.
Rettew, David P., 323 E. Chestnut St., Coatesville.
Reynolds, Duer, Kennett Square.
Richmond, Thomas S., Guthriesville.
Rothrock, Harry A., West Chester.
Rulon, Samuel A., Phoenixville.
Scattergood, Joseph, West Chester.
Scott, J. Clifford, Oakbourne.
Scott, S. Horace, Coatesville.
Sharpless, William T., West Chester.
Smith, Harry T., Elverson.
Smith, Mary H., Parkesburg.
Smith, Willis N., Phoenixville.
Spangler, John L., Devon.
Stone, Charles H., Coatesville.
Taylor, Jackson, Coatesville.
Taylor, James T., Pomeroy.
Thomas, John G., Newtown Square (Delaware Co.).
Walker, James B., Mendenhall.
Warren, B. Harry, West Chester.
Webb, Walter, West Chester.
Wells, Frank H., Chester Springs.
West, Frederick B., Kemblesville.
Wherry, C. Norwood, 2818 N. Bailey St., Phila. (Phila. Co.).
Williams, Della Hannah, Berwyn.
Woodward, Charles E., West Chester.
Woodward, W. Wellington, West Chester.

CLARION COUNTY SOCIETY

(Organized May 5, 1865.)

President...James M. Hess, Tylersburg.
V. Pres......Charles V. Hepler, New Bethlehem.
Secretary...Charles C. Ross, Clarion.
Treasurer...Benjamin G. Wilson, Clarion.*
Reporter....Sylvester J. Lackey, Clarion.
Censors.....Albert J. Hepler, New Bethlehem.
George B. Woods, Curllsville.
Prog. Com..Benjamin G. Wilson, Clarion.*
John T. Rimer, Clarion.
Committee on Public Policy and Legislation:
Albert J. Hepler, New Bethlehem.
William C. Keller, New Bethlehem.
George B. Woods, Curllsville.

Stated meetings at selected places the fourth Tuesday in April, July and October. Annual meeting at Clarion the fourth Tuesday of January.

MEMBERS (30)

Aaronoff, Joseph, Shippensville.
Booth, Fred K., 302 Corbet St., Tarentum (Allegheny Co.).
Camp, John N., Foxburg.
Clover, Cuvier L., Knox.
Dillenbeck, Charles O., Strattonville.
Fitzgerald, Charles A., Clarion.
Harter, Thomas H., East Brady.
Hepler, Albert J., New Bethlehem.

Hepler, Charles Verne, New Bethlehem.
Hess, Henry N., Fryburg.
Hess, James M., Tylersburg.
Hoffman, Charles W., Rimersburg.
Hoover, Albert M., Parkers Landing (Armstrong Co.).
Huston, Charles C., Knox.
Kahle, I. Dana, Knox.
Kahle, Harold H., Leeper.
Keller, William C., New Bethlehem.
Lackey, Sylvester J., Clarion.
McAninch, David Lewis, Lamartine.
Meals, Nelson M., Callensburg.
Miller, John B., Sligo.
Phillips, Franklin Pierce, Box 555, Franklin.
Rimer, John T., Clarion.
Ross, Charles C., Clarion.
Sayers, Clement E., Hawthorn.
Stute, John E., Parkers Landing (Armstrong Co.).
Summerville, John F., Monroe.
Walker, Byron P., West Monterey.
Wellman, Harrison M., St. Petersburg.
Woods, George B., Curllsville.

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*Deceased.

CLEARFIELD COUNTY SOCIETY

(Organized Sept. 27, 1864. Chartered May 8, 1894.)

(Clearfield is the post office when street address only is given.)

President...James A. Miller, Grampian.
1st V. Pres...William C. Browne, Burnside.
2d V. Pres...James M. Cornely, Madera.
Secretary...John M. Quigley, 922 Dorey St.
Treasurer...Ward O. Wilson, 210 N. Second St.
Ed.-Rept....William E. Reily, 8 Turnpike Ave.
Censors.....Samuel D. Bailey, 119 Walnut St.
J. Frank Rowles, Mahaffey.
H. Albert Blair, Curwensville.
Committee on Public Policy and Legislation:
Samuel J. Waterworth, 102 S. Second St.
William B. Henderson, Philipsburg.
Lever F. Stewart, 108 N. Second St.
Exec. Com...James A. Miller, Grampian.
John M. Quigley, 922 Dorey St.
Arthur D. Cowdrick, 102 N. Second St.
Official Publication: Clearfield County Medical Society Bulletin.
Issued Monthly.
Editor: William E. Reily, 8 Turnpike Ave.

Stated meetings second Wednesday of each month at various places in the county. Election of officers in January.

MEMBERS (65)

Andrews, Warren W., Philipsburg (Center Co.).
Bailey, Samuel D., 119 Walnut St.
Benson, Andrew L., Philipsburg (Center Co.).
Blair, H. Albert, Curwensville.
Brockbank, John I., Dubois.
Browne, William C., Burnside.
Bryan, Wallace S., Box 141, Ramey.
Cornely, James M., Madera.
Cowdrick, Arthur D., 108 N. Second St.
Currier, Jonathan A., Grampian.
Dale, John, Philipsburg (Center Co.).
Derick, Alma Read, Bellwood (Blair Co.).
Dinger, Michael C., Morrisdale.
Erhard, Elmer S., New Millport.
Falconer, William G., Olanta, R. D. (P. O.).
Flegal, Irwin Scott, Karthaus.
Frantz, J. Paul, 213 N. Second St.
Gann, George Willard, 42 W. Long Ave., Dubois.
Ginter, James E., McEwen Bldg., Dubois.
Gordon, John W., 206 Locust St.
Harman, L. Cooper, Philipsburg (Center Co.).
Harper, Francis Watts, Irvona.
Hayes, Senes E., Byrnedale (Elk Co.).
Henderson, James L., Osceola Mills (Life Member).
Henderson, William B., Philipsburg (Center Co.).
Henritzy, Oscar E., Winburne.
Houck, Earl E., Dubois.
Houck, Willis A., Dubois.
Hyskell, William D., Madera.
Jackson, Robert, Osceola Mills.
Jenkins, George C., 702-706 State St., Curwensville.
Jones, Evan L., Philipsburg (Center Co.).
King, Hiram O., Curwensville.
Kirk, George B., Kylertown.
Learn, Blair G., Ansonville.
Lewis, Homer H., Surveyor.
Liken, Loyal L., Smith Mill.
Lynn, Austin C., 122 Presqueisle St., Philipsburg (Center Co.).
McGirk, Charles E., Philipsburg (Center Co.).
Mauk, George Edmund, Woodland.
Miller, James A., Grampian.
Miller, Summerfield J., Madera.
Morris, Samuel J., Houtzdale.
Patterson, Floyd G., Du Bois.
Piper, William S., 210 N. Second St.
Quigley, John M., 922 Dorey St.
Quinn, Luther W., Box 273, Dubois.
Reiley, William E., 8 Turnpike Ave.
Ricketts, George Allen, Osceola Mills.
Rowles, J. Frank, Mahaffey.
Rowles, Lewis C., 200 N. Second St.
Rucker, James B., 314 Pine St.
Shivery, George B., Woodland.
Stalberg, Samuel, Boardman.
Stewart, Lever F., 108 N. Second St.
Sullivan, John C., Dubois.
Thompson, Harry H., Philipsburg (Center Co.).
Tyson, J. McClure, Dubois.
Waterworth, Samuel J., 102 S. Second St.
Williams, Richard Lloyd, Houtzdale.
Wilson, Ward O., 210 N. Second St.
Woodside, Harry A., 112 S. Second St.
Woodside, Horatio L., Bigler.
Woolridge, J. Hayes, Cor. Third and Market Sts.
Yeaney, Gillespie B., 111 S. Second St.

CLINTON COUNTY SOCIETY

(Organized 1866. Reorganized 1883.)

President...Marsden D. Campbell, Logantown.
V. Pres.....James L. Lubrecht, Lock Haven.
Sec.-Treas...Robert B. Watson, Lock Haven.
Rec. Sec.....Clair B. Kirk, Mill Hall.
Censors.....John B. Critchfield, Lock Haven.
Saylor J. McGhee, Lock Haven.
Clair B. Kirk, Mill Hall.
Committee on Public Policy and Legislation:
John B. Critchfield, Lock Haven.
Edwin C. Blackburn, Lock Haven.

Stated meetings in Lock Haven Hospital the fourth Friday of each month at 8 p. m. Election of officers in January.

MEMBERS (23)

Blackburn, Edwin C., Lock Haven.
Campbell, Marsden D., Logantown.
Critchfield, John B., Lock Haven.
Dwyer, Francis P., Renovo.
Fulmer, Charles L., Renovo.
Green, George D., Lock Haven.
Harshberger, Joseph W., Lamar.
Holloway, Luther M., Salona.
Kirk, Clair B., Mill Hall.
Lubrecht, James Louis, Lock Haven.
McGhee, Saylor J., 214 W. Main St., Lock Haven.
Mervine, Graydon D., 204 W. Main St., Lock Haven.

Painter, Allen B., Mill Hall.
Roach, Thomas E., Renovo.
Rosser, Orrin H., Renovo.
Rothrock, Donald M., Bitumen.
Shoemaker, William J., Lock Haven.
Teah, Theodore E., 103 W. Main St., Lock Haven.
Thomas, David W., Lock Haven.
Tibbins, Joseph E., Beech Creek.
Tibbins, Perry McDowell, Beech Creek.
Watson, Robert B., Lock Haven.
Welliver, William E., Lock Haven.

COLUMBIA COUNTY SOCIETY

(Organized June 31, 1858.)

President...Frank R. Clark, Berwick.
1st V. Pres..Harry S. Buckingham, Berwick.
2d V. Pres...Donald B. McHenry, Orangeville.
Sec.-Treas...Luther B. Kline, Catawissa.
Librarian...John W. Bruner, Bloomsburg.
Censors.....Edward L. Davis, Berwick.
Frank R. Clark, Berwick.
James R. Montgomery, Bloomsburg.
Committee on Public Policy and Legislation:
Henry Bierman, 38 W. Fourth St., Bloomsburg.
J. Elmer Shuman, Bloomsburg.
Official Publication: The Roster.
Issued Monthly.
Editor: Luther B. Kline, Catawissa.

Stated meetings second Thursday of each month, at Bloomsburg, in March, June, September and December; at Berwick in February, May, August and November; at Catawissa in January, April and October; at Benton in July. Election of officers in December.

MEMBERS (43)

Albertson, Charles K., Benton.
Arment, Samuel B., Bloomsburg.
Bierman, Henry, 38 W. Fourth St., Bloomsburg.
Brobst, Jacob A., Bloomsburg.
Brown, J. Jordan, Bloomsburg.
Bruner, John W., Bloomsburg.
Buckingham, Harry S., Berwick.
Carl, Allen Vincent, Numidia.
Christian, Howard S., Millville.
Clark, Frank R., Berwick.
Cohen, Joseph, Berwick.
Davis, Edward L., Berwick.
Davis, Reuben O., Berwick.
Drum, George F., Mifflinville.
Follmer, George Elmer, Bloomsburg.
Freas, Martin W., Berwick.
Gemmill, James R., Millville.
Glenn, Edwin A., Berwick.
Gordner, Jesse W., Jerseytown.
Harter, Theodore C., Bloomsburg.
Hensyl, William C., Berwick.
Hower, Heister V., Berwick.
Hughes, Willet P., Bloomsburg.
John, J. Stacey, Bloomsburg.
Kline, Luther B., Catawissa.
Long, Clark S., 605 Walnut St., Lansdale (Montg. Co.).
McHenry, Donald B., Orangeville.
Miller, Ralph E., Bloomsburg.
Montgomery, James R., Jr., Bloomsburg.
Montgomery, James R., Sr., Bloomsburg.
Patterson, Isaac E., Benton.
Pfahler, J. Fred., Berwick.
Robbins, Clifton Z., Bloomsburg.
Sharpless, Benjamin F., Catawissa.
Shuman, Ambrose, Catawissa.
Shuman, J. Elmer, Bloomsburg.
Steck, Charles T., Berwick.
Tustin, Ruth, Bloomsburg.
Vastine, J. Marion, Catawissa.
Warntz, Ralph E., Nescopeck (Luzerne Co.).
Wear, Roland F., Berwick.
Wintersteen, John C., Bloomsburg.
Wolf, Isaac R., Espy.
Yost, Charles B., Bloomsburg.

CRAWFORD COUNTY SOCIETY

(Organized 1867.)

President...William W. Shaffer, Meadville.
1st V. Pres..Carl M. Hazen, Titusville.
2d V. Pres...Walter H. Cowan, Harmonsburg.
Sec.-Treas...Cornelius C. Laffer, Meadville.
Censors.....William G. Johnston, Titusville.
Harry C. Winslow, Meadville.
J. Charles McFate, Meadville.
Committee on Public Policy and Legislation:
Oliver H. Jackson, Meadville.
Herbert H. Hildred, Titusville.
Frank A. Clawson, Meadville.
J. Russell Mosier, R. D. 2, Meadville.
Sylvester F. Hazen, Hartstown.
Committee on Health and Public Instruction:
R. Bruce Gamble, Meadville.
William E. Hyskell, Meadville.
Rodney S. Smith, Saegerstown.
Glennis E. Humphrey, Cambridge Springs.
James C. Logan, Titusville.
Samuel J. Dickey, Conneautville.
John K. Roberts, Meadville.
Frederick L. Nisbet, Meadville.
Clyde L. Williams, Linesville.
Official Publication: The Bulletin.
Issued Monthly.
Editor: Cornelius C. Laffer, Meadville.

Stated meetings the first Wednesday of each month, except July, at 1:30 p. m., in the Chamber of Commerce, Meadville. Election of officers in January.

MEMBERS (52)

Axtell, John L., Cochranton.
Brophy, Edwin E., Meadville.
Brush, Harry L., Conneaut Lake.
Campbell, Mary M., Meadville.
Clark, Robert W., Venango.
Clawson, Frank A., Meadville.
Clouse, Arne Wilbur, Geneva.
Cowan, Walter H., Harmonsburg.
Cuthbert, Elmer P., Titusville.
Daniels, Henry M., R. F. D. 1, Venango.
Dickey, Samuel J., Conneautville.
Eiler, V. Burton, Titusville.
Ferer, Charles K., Meadville.
Gamble, R. Bruce, Meadville.
Gamble, William M., Little Cooley.
Greenfield, Robert N., Penn Line.
Hayward, George Ernest, Meadville.
Hazen, Carl M., Titusville.
Hazen, Sylvester F., Hartstown.
Hildred, Herbert Howard, Titusville.
Hill, Clarence C., Meadville.
Humphrey, Glennis E., Cambridge Springs.
Hyskell, William E., Meadville.
Jackson, Oliver H., Meadville.
Jameson, Hugh, Titusville.
Johnston, William G., Titusville.
Laffer, Cornelius C., Meadville.
Lewis, Frank L., Atlantic.
Logan, James A., Cambridge Springs.
Logan, James Clark, Titusville.
Lowry, James A., Cochranton.
McFate, J. Charles, Meadville.
Mock, David C., 215 Cajon St., Redlands, California.
Mosier, J. Russell, R. D. 2, Meadville.
Nisbet, Frederick L., Meadville.
Quay, William H., Jr., Townville.

Rastatter, Paul, Meadville.
Roberts, John K., Meadville.
Rumsey, Frank M., Conneautville.
Shaffer, William Walter, Meadville.
Skelton, William B., Meadville.
Smith, Rodney S., Saegerstown.
Snodgrass, David G., Meadville.
Spicer, Clarence E., Titusville.
Thomas, George D., 745 North Park Ave., Meadville.
Thompson, Charles Wesley, Meadville.
Walker, Herman H., Linesville.
Walker, James N., Linesville.
Werle, Edgar J., Meadville.
Williams, Clyde L., Linesville.
Wilson, Joseph C., Titusville.
Winslow, Harry C., 883 Water St., Meadville.

CUMBERLAND COUNTY SOCIETY

(Organized July 17, 1886.)

President...Seth I. Cadwallader, West Fairview.
1st V. Pres..Jacob B. Spangler, Mechanicsburg.
2d V. Pres...Parker W. Wagoner, Carlisle.
Secretary...Calvin R. Rickenbaugh, Carlisle.
Treasurer...Ambrose Peffer, Carlisle.
Censors.....George L. Zimmerman, Carlisle.
William T. Phillipy, Carlisle.
R. McMurran Shepler, Carlisle.
Committee on Public Policy and Legislation:
Harry A. Spangler, Carlisle.
Newton W. Hershner, Mechanicsburg.
David W. Van Camp, Plainfield.

Official Publication: Bi-monthly Announcement of the Medical Society of Cumberland County.
Issued every two months.
Editor: Calvin R. Rickenbaugh, Carlisle.

Stated meetings second Tuesday of January, March, May, July, September and November; the January meeting at Carlisle; the place of the other meetings to be determined by vote of the society or on invitation. Election of officers in January.

MEMBERS (38)

Bashore, Harvey B., West Fairview.
Beale, John E., Lemoyne.
Bowman, John W., Lemoyne.
Cadwallader, Seth I., West Fairview.
Cowell, Selden Sylvester, Carlisle.
Dougherty, Milton M., Mechanicsburg.
Etter, Harry B., Shippensburg.
Fickel, Creedin S., Carlisle.
Galbraith, Anna M., Carlisle.
Good, John F., New Cumberland.
Hershner, Newton W., Mechanicsburg.
Irwin, George G., Mount Holly Springs.
Lawton, Henry C., Camp Hill.
Lefever, Enos K., 630 S. Hanover St., Carlisle.
Le Van, J. Kimberly, Carlisle.
Longsdorf, Harold H., Dickinson.
McCreary, J. Bruce, Shippensburg.
Meily, Harry S., Carlisle.
Mowery, Samuel E., Mechanicsburg.
Peffer, Ambrose, Newville.
Peters, William E., Carlisle.
Phillipy, William Tell, Carlisle.
Plank, Edward R., Carlisle.
Preston, Thomas Walbank, Carlisle, R. D. 1.
Rich, Edward Y., Marietta (Lancaster Co.).
Rickenbaugh, Calvin R., Carlisle.
Ruch, William S., Carlisle.
Shepler, R. McMurran, Carlisle.
Shoemaker, Ferdinand, U. S. P. H. S. Hospital, No. 67, 11th and Harrison Sts., Kansas City, Mo.
Spangler, Harry A., Carlisle.
Spangler, Jacob B., Mechanicsburg.
Stewart, Alexander, Shippensburg.
Stoey, Oliver P., Newville.
Sutliff, S. Dana, Shippensburg.
Taylor, Walter S., Carlisle.
Van Camp, David W., Plainfield.
Wagoner, Parker W., Carlisle.
Zimmerman, George L., Carlisle.

DAUPHIN COUNTY SOCIETY

(Organized 1866.)

(Harrisburg is the post office when street address only is given.)

President...Herbert F. Gross, 1501 N. Second St.
1st V. Pres..Louise H. Taylor, 1800 N. Third St.
2d V. Pres...Gilbert L. Dailey, 713 N. Third St.
Sec.-Treas...Andrew J. Griest, Steelton.
Trustee.....Clarence R. Phillips, 1646 N. Third St.
Reporter....Maud C. Exley, 112 State St.
Censors.....W. Tyler Douglas, 1643 Derry St.
John W. Macmullen, 1732 Market St.
John B. McAlister, 234 N. Third St.
Committee on Public Policy and Legislation:
David I. Miller, 1839 N. Sixth St.
John B. McAlister, 234 N. Third St.
Charles E. L. Keene, 1849 Berryhill St.
Roscoe L. Perkins, 2001 N. Second St.
Robert E. Holmes, Eighteenth and State Sts.
William J. Middleton, Steelton.

Official Publication: The Dauphin Medical Academician.
Issued Monthly.
Editor: Clarence R. Phillips, 1646 N. Third St.

Regular meetings are held at 8:30 p. m., on the first Tuesday of every month, except July and August, at the Harrisburg Academy of Medicine Building, 319 N. Second St. Library and Reading Room same place. Board of Governors meets last Tuesday of each month at 8:30 p. m. Election of officers in January.

MEMBERS (153)

Akers, Andrew T., 1941 Green St.
Arnold, John Loy, 1509 Market St.
Baker, William C., Hummelstown.
Batdorf, Claude Wellington, 1600 N. Third St.
Bauder, George W., 1225 N. Second St.
Blair, Thomas, S., 403 N. Second St.
Bobb, Clarence C., Lykens.
Bowman, Thomas E., 1541 State St.
Brown, George L., Fort Hunter.
Beuhler, William S., Elizabethville.
Byrod, Frederick W., 223 Pine St., Steelton.
Coble, Aaron S., Dauphin.
Cocklin, Charles C., 126 Walnut St.
Coover, Carson, 223 Pine St.
Coover, Frederick W., 223 Pine St.
Corbus, Howard L., Penna. State Hospital.
Crampton, Charles H., 600 Forster St.
Culp, John F., 410 N. Third St.
Dailey, Cornelius M., 1727 N. Sixth St.
Dailey, Gilbert L., 713 N. Third St.
Dailey, William P., Steelton.
Dapp, Gustave A., 1818 N. Third St.
Darlington, Emerson E., 2025 N. Sixth St.
Deckard, Park A., 709 N. Third St.
Deckard, Percy E., 13 Trinity Place, Williamsport (Lycoming Co.).
DeVenney, John C., 1115 N. Second St.
Dickinson, Bayard T., 343 N. Front St., Steelton.
Dickinson, J. Edward, 228 N. Second St.
Douglas, Henry Rea, 1800 Market St.
Douglass, William T., 1634 Derry St.
Ellenberger, John Wesley, 922 N. Third St.
Emrich, Marion W., 1426 Market St.
Evans, William P., 109 W. Emaus St., Middletown.

Everhart, Edgar S., Lemoyne (Cumberland Co.).
Exley, Maude C., 112 State St.
Fager, Charles B., 410 N. Second St.
Fager, John H., Jr., 120 Walnut St.
Fager, V. Hummel, 410 N. Second St.
Faller, Constantine P., 236 State St.
Farnsler, H. Hershey, 1438 Market St.
Frasier, Lester W., Bowman Ave. and Market St., Camp Hill (Cumberland Co.).
Funk, David S., 300 N. Second St.
Garfinkle, B. Milton, 1219 N. Second St.
George, Henry William, Middletown.
Goldman, Louis C., 710 N. Sixth St.
Good, John L., Fourth and Bridge Sts., New Cumberland (Cumberland Co.).
Goodman, Charlotte E., State Hospital.
Graber, Leon K., 901 N. Second St.
Gracey, George F., 209 State St.
Green, Edward M., Penna. State Lunatic Hospital.
Griest, Andrew Jackson, Steelton.
Gross, Herbert F., 1501 N. Second St.
Hamilton, Hugh, 315 Walnut St.
Hassler, Samuel F., 500 N. Second St.
Hazen, Merl V., 410 N. Third St.
Hetrick, David Joseph, 54 N. Thirteenth St.
Hileman, Joseph B., 413 Market St.
Holmes, Robert E., Eighteenth and State Sts.
Horne, John W., Jr., Hummelstown.
Hottenstein, D. Edgar, 403 Union St., Millersburg.
Houck, William S., 1517 N. Second St.
Hursh, Robert M., 224 N. Third St.
James, William T., 1900 N. Sixth St.
Jauss, Christian E., 1323 N. Sixth St.
Jeffers, Benjamin B., 36 N. Front St., Steelton.
Keene, Charles E. L., 1849 Berryhill St.
Kilgore, Frank D., 2011 N. Sixth St.
Kingsbury, Oscar J., Steelton.
Kirby, Harry J., 2118 N. 6th St.
Kirkpatrick, Samuel A., 200 Third St., New Cumberland (Cumberland Co.).
Klase, Harry E., 1706 Market St.
Kocevar, Martin F., 403 S. Second St., Steelton.
Kreider, John H., 1410 Derry St.
Kunkel, George B., 118 Locust St.
Kunkel, W. Minster, 601 N. Front St.
Lakin, Harry A., 10 S. Twentieth St.
Laverty, George L., 226 State St.
Lawson, Edward Kirby, Penbrook.
Layton, Morris H., Jr., 930 N. Sixth St.
Lenker, Jesse L., 232 State St.
McAlister, John B., 234 N. Third St.
McGowan, Hiram, Penn Harris Hotel.
MacMullen, John W., 1732 Market St.
Manning, Charles J., 1519 N. Sixth St.
Marshall, A. Leslie, 631 Boas St.
Marshall, L. Samuel, Halifax.
Middleton, William J., 101 N. Second St., Steelton.
Miller, David I., 1839 N. Sixth St.
Miller, J. Harvey, 19 N. Fourth St.
Miller, Richard J., 124 State St.
Milliken, Howard E., 1837 N. Sixth St.
Moffitt, George R., 200 Pine St.
Mulligan, Peter B., 706 Center St., Ashland (Schuylkill Co.).
Myers, Hewett C., 232 S. Second St., Steelton.
Newman, Oscar A., 617 Race St.
Nicodemus, Edwin A., 1439 Derry St.
Nissley, Martin L., Hummelstown.
Noble, Mary Riggs, State Department of Health.
Oenslager, John, Jr., 711 N. Third St.
Oxley, James E. T., 8 S. Sixteenth St.
Page, Arthur L., 1315 Derry St.
Park, J. Walter, 32 N. Second St.
Perkins, Roscoe L., 2001 N. Second St.
Peters, Jacob M., R. D. 1, Camp Hill (Cumberland Co.).
Phillips, Clarence R., 1646 N. Third St.
Plank, John R., 106 N. Front St., Steelton.
Putt, Maurice O., Oberlin.
Rahter, J. Howard, 324 N. Second St.
Raunick, John M. J., 1410 N. Second St.
Rebuck, Charles S., 412 N. Third St.
Reckord, Frank F. D., 220 Kelker St.
Reed, Josiah F., 131 State St.
Rhoads, Joseph E., 402 N. Second St.
Rickert, Charles M., 232 Maclay St.
Ridgway, Richard Frederick L., Pouch A, Penna. State Hospital.
Ritzman, Allen Z., 234 State St.
Roberts, Sylvia J., 1837 N. Second St.
Russell, W. Stewart, 260 S. Second St., Steelton.
Saye, Ernest B., 4304½ E. Side Ave., Dallas, Texas.
Schaffner, Daniel W., Enhaut.
Shaffer, Harry A., Williamstown.
Shaffer, Joseph Wright, 2329 N. Sixth St.
Shearer, Alfred L., 804 N. Sixth St.
Shenk, Frank L., Linglestown.
Shepler, Norman Bruce, 510 N. Second St.
Sherger, John A., 1809 N. Sixth St.
Shope, Jacob W., 32 S. Thirteenth St.
Smith, B. Frank, 1601 Market St.
Smith, Harvey F., 130 State St.
Snyder, Charles R., Marysville (Perry Co.).
Stauffer, Charles C., 1516 N. Second St.
Stevens, John C., 240 S. Thirteenth St.
Stine, Harvey A., 1701 Derry St.
Stull, George B., 217 Woodbine St.
Swartz, Oliver H., 310 N. Spring St., Middletown.
Swiler, Robert D., 1331 Derry St.
Taylor, Louise H., 1800 N. Third St.
Traver, David B., Steelton.
Traver, Samuel N., 128 Locust St.
Trullinger, Charles I., 2022 N. Sixth St.
Ulrich, Marion, 139 Center St., Millersburg.
Wagenseller, James K., Marietta (Lancaster Co.).
Walter, Harry B., 1317 N. Third St.
Weirick, Ernest Charles, Enola (Cumberland Co.).
West, William H., 1801 Green St.
Whipple, Earle Rogers, 210 S. Second St., Steelton.
Widder, George H., 1244 Derry St.
Wintersteen, Grace, State Hospital.
Wright, Louis W., 227 Pine St.
Wright, William E., 206 State St.
Yoffe, Richard, 721 N. Sixth St.
Zeigler, John B., Penbrook.
Zimmerman, J. Landis, Hershey.

DELAWARE COUNTY SOCIETY

(Organized May 30, 1850)

(Chester is the post office when street address only is given.)

President...John Byers Roxby, Swarthmore.
1st V. Pres..J. Clinton Starbuck, Media.
2d V. Pres...Stoddard P. Gray, 1925 W. Third St.
Sec.-Treas...Walter E. Egbert, 601 E. Thirteenth St.
Reporter....George B. Sickle, 516 E. Ninth St.
Librarian....C. Beverly Shortlidge, Lima.
Censors.....J. Harvey Fronfield, Media.
Katherine Ulrich, 413 E. Ninth St.
Harry C. Donahoo, 511 Kerlin St.
Committee on Public Policy and Legislation:
Adam J. Simpson, 401 E. Twelfth St.
George H. Cross, 525 Welsh St.
J. William Wood, 219 E. Fifth St.
Exec. Com..John B. Roxby, Swarthmore.
J. Clinton Starbuck, Media.
Walter E. Egbert, 601 E. Thirteenth St.
Official Publication: The Bulletin.
Issued Monthly.
Editors: C. Irvin Stiteler, Fifth and Welsh Sts.
John S. Eynon, 328 E. Broad St.
Walter E. Egbert, 601 E. Thirteenth St.

MEMBERS (88)

Armitage, George L., Jr., Chester.
Armitage, Harry M., 401 E. Thirteenth St.
Bell, Ralph E., Media.
Bing, Edward W., Second and Norris Sts.
Blair, Walter A., Upland.
Boudart, Jane R., 817 Edgmont Ave.
Brown, Ellen, 714 Madison St.
Bryant, F. Otis, 500 E. Broad St.
Campbell, Ethan A., Ridley Park.
Clark, Ernest L., Media.
Crist, John O., 209 E. Ninth St.
Cross, George H., 525 Welsh St.
Crothers, George F., Marcus Hook.
Curd, Kirksey L., 1418 W. Third St.
Darlington, Horace H., Concordville.
Devereux, Robert T., 210 Yale Ave., Swarthmore.
Dick, H. Lenox H., Darby.
Dickeson, Morton P., Media.
Donahoo, Harry C., 511 Kerlin St.
Dunn, Joseph E., Third and Lloyd Sts.
Dunn, Louis S., 522 W. Ninth St.
Easby, Alice Rogers, 23 E. Second St., Media.
Egbert, Walter E., 601 E. Thirteenth St.
Emery, Walter V., 1135 Edgmont Ave.
Evans, Fred H., 216 W. Fourth St.
Evans, William B., Chester.
Eynon, John Schofield, 328 E. Broad St.
Fronfield, J. Harvey, Media.
Gallager, Harry, Seventh St. and Concord Ave.
Gottschalk, Leon, Marcus Hook.
Gray, Joseph R. T., Jr., City Hall.
Gray, Stoddard P., 1925 W. Third St.
Hammond, William, Glenolden.
Hoskins, John, 2414 Edgmont Ave.
Howell, Elizabeth W., 26th and Chestnut Sts.
Hughes, George M., 421 E. Ninth St.
Hunlock, Fred S., 514 Parker Ave., Collingdale.
Janvier, George Victor, 30 Runnymede Ave., Lansdowne.
Johnston, Frank E., Moores.
Kinne, Howard S., 307 East Broad St.
Lambichi, Marika E., 319 E. Broad St.
Landry, Walter A., 809 Madison St.
LaShelle, Charles L., Lenni Mills.
Lithgow, William D., Seventh and Barclay St.
Loughead, Raymond B., 2216 W. Third St.
Lyons, J. Chalmers, Marcus Hook.
McCutcheon, Thomas O., Upper Darby.
Maison, Robert S., 521 W. Seventh St.
Miller, J. Hume, 1629 W. Second St.
Monihan, Daniel H., Ninth St. and Morton Ave.
Morton, Alexander R., Morton.
Mullison, G. Bigelow, 212 E. Ninth St.
Neufeld, Maurice A., 407 E. Ninth St.
Nothnagle, Frank R., 408 E. Thirteenth St.
Orndoff, Hersey E., Glen Riddle.
Orr, Adrian V. B., 408-9 Crozer Bldg.
Owen, Richard, 1011 Chester Ave., Moores.
Parson, Isaac I., Media.
Pike, Perry Covington, 25 W. State St., Media.
Poulson, William W., 932 Market St., Marcus Hook.
Raiman, William A., Swarthmore.
Raven, Emile E., 1908 W. Second St.
Reynolds, Victor M., 120 Main St., Darby.
Roberts, James E., Lansdowne.
Roxby, John Byers, 110 Cornell Ave., Swarthmore.
Rozploch, Albin R., 415 Highland Ave.
Schoff, Charles H., Media.
Sharpe, A. Maxwell, 708 Sproul St.
Sherman, Jeannette H., Ridley Park.
Shortlidge, Charles B., Lima.
Sickle, George B., 516 E. Ninth St.
Simpson, Adam J., 401 E. Twelfth St.
Smith, Norman D., Swarthmore.
Stanton, Herbert C., Clifton Heights.
Starbuck, J. Clinton, Media.
Stiteler, C. Irwin, Fifth and Welsh Sts.
Stull, Clark Deakyne, 111 Swarthmore Ave., Ridley Park.
Ulrich, Katharine, 413 E. Ninth St.
Usset, Albert L., 712 W. Third St.
Webster, George C., 311 W. Seventh St.
Webster, George C., Jr., 311 W. Seventh St.
West, Harman, 60 Winona Ave., Norwood, Fairmount P. O.
White, Amy E., 807 Madison St.
Widmyer, J. Lawrence, Drexel Hill.
Wolfe, A. Chester, Ridley Park.
Wood, J. William, 219 E. Fifth St.

ELK COUNTY SOCIETY

(Organized 1881.)

President...John C. McAlister, Ridgway.
V. Pres.....Joseph E. Madara, St. Marys.
Secretary...Samuel G. Logan, Ridgway.
Treasurer...Michael M. Rankin, Ridgway.
Reporter....Samuel G. Logan, Ridgway.
Committee on Public Policy and Legislation:
Maurice T. Leary, Ridgway.
Russell P. Heilman, Emporium.
John W. Warnick, Johnsonburg.

Stated meetings at 1 p. m. the second Thursday of each month at Ridgway. Election of officers in January.

MEMBERS (24)

Atkinson, Walter M., Brockwayville (Jefferson Co.).
Barratt, Stanley, Wilcox.
Beale, Bertram A., Dubois (Clearfield Co.).
Black, Walter M., St. Marys.
Bush, Walter H., Emporium (Cameron Co.).
Dye, Adelbert D., Elbon.
Earley, Francis G., Ridgway.
Flynn, James G., Ridgway.
Fullmer, John B., Emporium (Cameron Co.).
Heilman, Russell P., Emporium (Cameron Co.).
Hutchison, George M., Dagus Mines.
Leary, Maurice T., Ridgway.
Logan, Samuel G., Ridgway.
Luhr, Augustus C., St. Marys.
McAllister, John Craig, Ridgway.
McCabe, Samuel T., Johnsonburg.
Madara, Joseph E., St. Marys.
Mansuy, Edward A., Driftwood (Cameron Co.).
Rankin, Michael M., Ridgway.
Rutherford, James E., Ridgway.
Shannon, Albert C., St. Marys.
Shaw, Walter C., Ridgway.
Smith, Henry H., Johnsonburg.
Warnick, John W., Johnsonburg.

ERIE COUNTY SOCIETY

(Reorganized June 25, 1895.)

President...Charles C. Kemble, 146 W. Ninth St.
1st V. Pres..William H. Roueche, 226 W. Eighth St.
2d V. Pres...Elmer G. Weible, 215 W. Seventh St.
Secretary...Roy S. Minerd, 128 W. Eighth St.
Treasurer...Frank B. Krimmel, 361 E. Sixth St.
Lib.-Rept....Fred E. Ross 132 W. Ninth St.
Censors.....Frank P. McCarthy, 110 W. Ninth St.
Thomas P. Tredway, 233 W. Eighth St.
Orel N. Chaffee, 820 Sassafras St.
Committee on Public Policy and Legislation:
John W. Wright, City Hall.
George S. Dickinson, 140 W. Eighth St.
Guy C. Boughton, 810 Peach St.
Charles C. Kemble, 146 W. Ninth St.
Roy S. Minerd, 128 W. Eighth St.

Stated meetings in the Library Building, Erie, the first Tuesday of each month at 8:30 p. m. Election of officers in January.

MEMBERS (130)

Ackerman, John, 138 W. Seventh St.
Allen, William G., 101 E. Eighteenth St.
Andrews, William K., Mill Village.
Barkey, Peter, 130 W. Ninth St.
Barrett, George T., 1001 French St.
Barrett, Martin C., 734 W. Eighth St.
Beck, Frank W., 408 E. Sixth St.
Bednarkiewicz, Ignatius A., 602 E. Twelfth St.
Bell, John J., 110 W. Ninth St.
Berry, Ellen W., 609 Masonic Bldg.
Bodine, Francis S., 1019 East Ave.
Boughton, Guy C., 810 Peach St.
Bunshaw, Albert H., 1204 W. Twenty-first St.
Cameron, Alexander C., 11 W. Eighth St.
Chaffee, Orel N., 820 Sassafras St.
Clapp, George H., Commerce Bldg.
Croop, J. Elmer, 557 E. Sixth St.
Darrow, John A., 106 W. Ninth St.
Dasher, J. Howard, 114 E. Sixth St.
Davis, Arthur G., 7 Howard Ave., Brookline, Mass.
Davis, Arthur F., North East.
Dennis, David N., 221 W. Ninth St.
Dennis, Edward P., 221 W. Ninth St.
De Tuerck, John K., 261 E. Eighth St.
Dickinson, George S., 140 W. Eighth St.
Douville, Jeffrey C., North East.
Drake, J. C. Merle, 720 Sassafras St.
Drozeski, Edward H., 117 E. Sixth St.
Dunn, Harrison A., 230 W. Eighth St.
Dunn, Ira J., 406 Masonic Temple.
Durbin, George S., Fairview.
Dutter, Guy E., N. Girard.
Eastman, Ford, Masonic Temple.
Falk, Harry S., 129 W. Eighth St.
Fisher, Fred, 343 E. Sixth St.
Flynn, Theobald M. M., 238 W. Tenth St.
Foringer, Henry H., Penna. S. and S. Home.
Fust, John H. E., 138 W. Ninth St.
Galster, Herman C., 129 W. Twenty-fifth St.
Gannon, Norbert D., 213 E. Ninth St.
Ghering, Harold A., Edinboro.
Gibbons, Robert L., 420 E. Eleventh St.
Gillespie, Warren S., Edinboro.
Gillette, Ninde T., 11 E. Washington St., Corry.
Graham, Vern W., Corry.
Griswold, Homer E., 812 Peach St.
Hall, Friend L., 234 W. Eighteenth St.
Hammond, Charles C., 2530 Parade St.
Hart, Fred C., Girard.
Heard, Corydon F., 402 Masonic Temple.
Heard, James L., North East.
Hess, Elmer, 501 Commerce Bldg.
Howe, J. Burkett, 932 Peach St.
Humphrey, William J., 5 South St., Union City.
Irwin, Jeremiah S., 125 W. Eighth St.
Jackson, DeWitt, 234 W. Eighth St.
Johnson, Philip T., 139 E. Sixth St.
Kalson, Abraham, 222 W. Eighth St.
Kemble, Charles C., 146 W. Ninth St.
Kern, Rudolph A., 1015 W. Eighth St.
Kibler, John C., Corry.
Kramer, Daniel W., 920 E. Twenty-first St.
Krimmel, Frank B., 361 E. Sixth St.
Krum, Astley G., 163 W. Eighteenth St.
Lasher, Lemuel A., 216 W. Twenty-fourth St.
Law-Wright, Katherine H., 247 W. Eighth St.
Lefever, Clarence H., 507 W. Eleventh St.
Lick, Maxwell, 149 W. Eighth St.
Lininger, Carl B., Sixth St. and East Ave.
Little, Theodore A., 259 E. Fifth St.
Luke, Ray H., 806 Rankin Ave., Lawrence Park.
Lyons, Harry E., 618 W. Twenty-sixth St.
McCallum, Chester H., 219 W. Eighth St.
McCallum, Malcolm J., 133 W. Ninth St.
McCarthy, Frank P., 110 W. Ninth St.
McConnell, Whitman C., 156 W. Eighth St.
McCune, Charles E., West Springfield.
McCune, Fred K., Girard.
McNeil, Charles A., 259 W. Eighth St.
Miller, Adelbert B., 147 W. Eighth St.
Miller, Richard O., 838 E. Twenty-fourth St.
Minerd, Roy S., 128 W. Eighth St.
Moorhead, Hugh M., 804 Peach St.
Mszanowski, Melchior M., 611 E. Fourteenth St.
O'Donnell, John J., 2420 Parade St.
Parsons, Percy P., 1022 W. Eighth St.
Peters, Charles O., Albion.
Pfadt, Jacob J., 715 W. Twenty-sixth St.
Poux, George A., 154 W. Eighth St.
Purcell, Thomas, 716 Sassafras St.
Putts, B. Swayne, 117 W. Eighth St.
Ray, George S., 153 W. Eighth St.
Reed, George A., 122 W. Twenty-first St.
Reichard, Simon W., 813 French St.
Reinoehl, David V., 139 W. Tenth St.
Renz, Oscar W., 526 E. Twenty-first St.
Richardson, William W., 159 W. Eighth St.
Ross, Fred E., 132 W. Ninth St.
Roth, Augustus H., 110 W. Ninth St.
Rouche, William H., 226 W. Eighth St.
Russell, James A. M., 206 Masonic Bldg.
Rutherford, J. Frank, Hastings (Cambria Co.).
Schlindwein, George W., 138 W. Ninth St.
Schmelter, John W., 213 W. Eighth St.
Schrade, Anna M., 716 Sassafras St.
Schurgot, James A., Lorain, Ohio.
Scibetta, Samuel L., 306 W. Eighteenth St.
Shreve, Owen M., 162 W. Eighth St.
Silliman, James E., 137 W. Eighth St.
Smith, Barney B., 129 W. Eighth St.
Stackhouse, Joseph A., 116 W. Eighth St.
Stark, James D., 960 E. Sixth St.
Steadman, Henry R., 529 E. Sixth St.
Steinberg, Edward I., 134 W. Ninth St.
Stoney, George F., 759 E. Sixth St.
Strickland, Charles G., 153 W. Seventh St.
Strimple, James T., 343 E. Twelfth St.
Stroble, Walter G., 359 E. Sixth St.
Studebaker, George M., 426 E. Tenth St.
Thompson, Ross W., Wesleyville.
Tredway, Thomas P., 233 W. Eighth St.
Trippe, Frank A., 220 W. 16th St.
Umburn, Leroy, Albion.
Walsh, Frank A., 128 E. Seventh St.
Washabaugh, William B., 253 W. Eighth St.
Weibel, Elmer G., 215 W. Seventh St.
Wheeler, Arthur C., 538 W. Seventh St.
Wishart, Hagar M., North East.
Worster, V. K., Waterford.
Wright, John W., 247 W. Eighth St.

FAYETTE COUNTY SOCIETY

(Organized May 18, 1869.)

(Connellsville is the post office when street address only is given.)

President...George H. Robinson, Uniontown.
1st V. Pres..Robert H. Jeffrey, Uniontown.
2d V. Pres...John V. McAninch, Alicia.
Sec.-Treas..Robert E. Heath, Fairchance.
Reporter....George H. Hess, Uniontown.
Censors.....Owen R. Altman, Uniontown.
Thomas B. Echard, Connellsville.
Wilbur M. Lilley, Brownsville.

Committee on Public Policy and Legislation:
Arthur E. Crow, Uniontown.
George W. Gallagher, Connellsville.
Wilbur M. Lilley, Brownsville.

Exec. Com..George H. Robinson, Uniontown.
Robert E. Heath, Fairchance.
James E. Van Gilder.

Official Publication: The Mirror.
Issued Monthly.
Editor: Robert E. Heath, Fairchance.

Regular meetings shall be held the first Thursday of each month in Rainey Club Room, second floor, Adams Building, Morgantown St., Uniontown.

MEMBERS (114)

Adams, Charles W., Uniontown.
Altman, Owen R., Uniontown.
Bailey, William J., Box 817.
Baltz, Samuel A., Uniontown.
Baum, Simon H., Uniontown.
Bell, Harry J., Dawson.
Bierer, Charles D., Uniontown.
Brady, Harry, Masontown.
Brooks, Don D., Connellsville.
Burchinal, Lowry N., Point Marion.
Carothers, J. Richard, Waltersburg.
Carroll, James Basil, Connellsville.
Cochran, James L., 132 S. Pittsburgh St.
Cogan, Jesse F., Dawson.
Colborn, Andrew J., 131 N. Pittsburgh St.
Coll, Hugh J., Box 635.
Conn, Clyde W., York Run.
Coughenour, Albert T., Point Marion.
Crawford, William B., Union St., Brownsville.
Crosbie, George T., Belle Vernon.
Crow, Arthur E., Uniontown.
Cunningham, Daken W., Fairchance.
Davidson, Carlton H., New Salem.
Dixon, John C., 118 W. Apple St.
Doran, Benjamin P., Uniontown.
Echard, Thomas B., 301 S. N. Bank Bldg.
Eddy, Alexander L., Greensboro (Greene Co.).
Edie, Elliott B., 308 First Natl. Bank Bldg.
Edmunds, George H., Connellsville.
Evans, George O., Uniontown.
Fosselman, Don C., Dunbar.
Fox, Gilbert G., Newell.
Gallagher, George W., 117 N. Sixth St.
Gordon, John W., Belle Vernon.
Graham, Charles R., Brownsville.
Gribble, Russell T., Fairchance.
Griffin, George H., Uniontown.
Guiher, Horace B., Smithfield.
Hackney, Jacob S., 36 W. Church St., Uniontown.
Hall, Herbert E., Natl. Bank of Fayette Co. Bldg., Uniontown.
Hansel, George B., Fayette City.
Hazlett, Jesse H., Vanderbilt.
Heath, Robert E., Fairchance.
Heise, Herman A., Uniontown.
Hemington, J. Glenn, 39 Morgantown Place, Uniontown.
Herrington, Lee R., New Salem.
Hess, George H., Uniontown.
Hibbs, Samuel E., Uniontown.
Hoffman, Harry Clyde, Box 754.
Hoover, Freeman S., Brownsville.
Hopwood, George B., Chestnut Ridge.
Hopwood, William Henry, Smock.
Hunger, Arthur D., Point Marion.
Ingraham, Eben R., Masontown.
Jackson, James Marcus, New Salem.
Jackson, John D., 210 E. Crawford Ave.
Jeffrey, Robert Harrison, Box 1041, Uniontown.
Johnson, Chester B., Mt. Braddock.
Johnson, L. Dale, S. N. Bank Bldg.
Junk, James L., 104 Meadow Lane.
Kerr, J. French, 115 E. Fairview Ave.
Kidd, Alexander R., 402 S. N. Bank Bldg.
Kimmel, William S., Uniontown.
LaClair, Charles H., 24 Church St.
Larkin, Martin J., Brier Hill.
Lilley, Wilbur M., Brownsville.
Lowe, David E., Uniontown.
Luman, Clark M., Uniontown.
McAninch, John V., Alicia.
McCombs, Edgar A., 345 N. Pittsburgh St.
McCormick, Louis P., 201 S. N. Bank Bldg.
McCracken, Jesse L., Smithfield.
McDaniel, Robert A., Connellsville.
McHugh, William A., Uniontown.
McKee, Robert S., 414 S. Ninth St.
Marston, Albion J., Belle Vernon.
Martin, Ralph S., Star Junction.
Means, William H., Lemont.
Merrick, Frank X., Uniontown.
Messmore, Harry Benjamin, Brownsville.
Messmore, John Lindsey, Masontown.
Messmore, Walter T., Hillcoke.
Myers, Wilbur T., Uniontown.
Morrison, R. R., Mount Braddock.
Neff, George W., Masontown.
Nixon, James Holbert, Uledi.
Noon, Milton A., Everson.
O'Neil, Andrew, Uniontown.
Opinsky, Andrew G., New Kensington (Westmoreland Co.).
Osbourn, Wilkins William, Upper Middletown.
Parshall, James W., Uniontown.
Patterson, William P., Fairchance.
Peters, Stephen E., Masontown.
Pisula, Vincent Paul, Everson.
Ralston, H. E., Uniontown.
Rasley, Edwin R., Uniontown.
Rebok, Edward H., Waltersburg.
Reichard, Louis N., Brownsville.
Robbins, William H., Vanderbilt.
Robinson, George H., Uniontown.
Roelkey, F. D., Uniontown.
Ryan, Charles C., Republic.
Sangston, D. Hibbs, McClellandtown.
Sangston, James H., McClellandtown.
Sherrick, Earl C., 136 S. Pittsburgh St.
Smith, Charles H., 93 Morgantown St., Uniontown.
Smith, Peter Franklin, Uniontown.
Steeves, Edward W., Republic.
Stollar, Bert Lee, Fayette City.
Sturgeon, John D., Uniontown.
Van Gilder, James E., Uniontown.
Wagoner, LeRoy C., Brownsville.
Warne, William, Dunbar.
Wilson, James H., Belle Vernon.

FRANKLIN COUNTY SOCIETY

(Organized Jan. 4, 1825. Reorganized 1866.)

President...Harry M. Miley, Chambersburg.
1st V. Pres..Lewis H. Seaton, Chambersburg.
2d V. Pres...Ambrose W. Thrush, 41 Lincoln Way, W., Chambersburg.
Secretary...John J. Coffman, Scotland.
Asst. Sec....Samuel D. Shull, Chambersburg.
Treasurer...Frank N. Emmert, Chambersburg.
Censors.....John K. Gordon, Chambersburg.
LeRoy H. Saxe, Fannettsburg.
Percy C. Hoover, Waynesboro.

Exec. Com..Harry M. Miley, Chambersburg.
John J., Coffman, Scotland.
Samuel D. Shull, Chambersburg.

Committee on Public Policy and Legislation:
Theodore Peters, Chambersburg.
Ambrose W. Thrush, Chambersburg.
J. Burns Amberson, Waynesboro.

Official Publication: Call and Roster.
Issued Bi-Monthly.
Editor: John J. Coffman, Scotland.

Stated meetings in Chambersburg the third Tuesday of each month unless otherwise decided. Election of officers in January.

MEMBERS (51)

Amberson, J. Burns, Waynesboro.
Bridgers, Harvey C., Blue Ridge Summit.
Brosius, William H., Mont Alto.
Brown, Robert B., Waynesboro.
Bushey, Franklin A., Greencastle.
Coffman, John J., Scotland.
Coons, Samuel G., Dry Run.
Croft, John W., 152 West Main St., Waynesboro.
Emmert, Frank N., 158 Lincoln Way, E., Chambersburg.
Ennis, Joseph, Waynesboro.
Gans, Charles C., Capt. M. C., Camp A. A. Humphreys, Va.
Gelwix, John M., Chambersburg.
Gilland, John C., Greencastle.
Gilland, Thomas H., Greencastle.
Gordon, John K., 253 N. Main St., Chambersburg.
Holland, W. Edgar, Fayetteville.
Hoover, Percy D., Waynesboro.
Kauffman, Leslie M., Chambersburg, R. R. 8.
Keck, George O., State Sanatorium, Mont Alto.
Kempter, J. Elmond, 150 E. Queen St., Chambersburg.
Kinter, John H., 222 N. Main St., Chambersburg.
Laughlin, Rebecca P., 11 N. Thirty-fourth St., Philadelphia (Phila. Co.).
McClain, Harry C., Hustontown (Fulton Co.).
Maclay, Joseph P., 44 Lincoln Way W., Chambersburg.
Miley, Harry M., North Main St., Chambersburg.
Mosser, John W., McConnellsburg (Fulton Co.).
Myers, Benjamin F., 55 S. Second St., Chambersburg.
Ogle, Charles C., 219 S. Main St., Chambersburg.
O'Rear, William B., Waynesboro.
Palmer, Charles F., 125 E. Queen St., Chambersburg.
Palmer, J. Judson, Needmore (Fulton Co.).
Peters, Theodore, 164 E. Queen St., Chambersburg.
Robinson, George M., McConnellsburg (Fulton Co.).
Russell, Ella M., Lurgan Bldg., Chambersburg.
Ryder, Anna L. B., 37 W. Queen St., Chambersburg.
Saxe, LeRoy H., Fannettsburg.
Schultz, William C., Waynesboro.
Seaton, Lewis H., 156 Lincoln Way, E., Chambersburg.
Seibert, William E., Greencastle.
Shoemaker, David M., Waynesboro.
Shull, Samuel D., Main and King Sts., Chambersburg.
Snively, A. Barr, Waynesboro.
Sollenberger, Aaron B., Potomac and Second Sts., Waynesboro.
Sowell, George A., Greencastle.
Stewart, Helen M., 688 Phila. Ave., Chambersburg.
Swann, James H., St. Thomas.
Thomas, Samuel B., Waynesboro.
Thrush, Ambrose W., 41 Lincoln Way, W., Chambersburg.
Varden, Robert B., Mercersburg.
Weagley, Theodore H., Marion.
White, Thomas D., Orrstown.
Wright, Fairfax G., 153 S. Main St., Chambersburg.

GREENE COUNTY SOCIETY

(Organized June 26, 1883.)

President...Rufus E. Brock, Waynesburg.
V. Pres.....Frank S. Ullom, Waynesburg.
Sec.-Treas...Harry C. Scott, Waynesburg.
Cor. Sec.....Robert W. Norris, Waynesburg.
Reporter....Thomas B. Hill, Waynesburg.
Censors.....Charles W. Spragg, Waynesburg.
Samuel T. Williams, Waynesburg.
Thomas N. Millikin, Waynesburg.
Committee on Public Policy and Legislation:
Rufus E. Brock, Waynesburg.
Thomas L. Blair, Waynesburg.
Thomas B. Hill, Waynesburg.
Exec. Com..Charles W. Spragg, Waynesburg.
Robert W. Norris, Waynesburg.
Lindsey S. McNeely, Kirby.

Stated meetings at Waynesburg the second Tuesday of each month. Election of officers in May.

MEMBERS (28)

Askey, John W., Nemacolin.
Bane, Clinton E., Jefferson.
Blair, Thomas L., Waynesburg.
Brock, Rufus Edward, Waynesburg.
Clendenning, W. B., Jollytown.
Coen, John A., Bristoria.
Core, Amanda R., Whiteley.
Day, Clinton H., Clarksville.
Day, Jonathan R., Nineveh.
Frankenburger, W. Sturgis, Carmichaels.
Hatfield, George W., Mt. Morris.
Hill, Thomas Benton, Waynesburg.
Hoge, Smith A., Rices Landing.
Iams, Samuel H., Waynesburg.
Knox, James A., Waynesburg.
Laidley, Edmund W., Carmichaels.
Lutz, Carl L., Rices Landing.
McNeely, Lindsey S., Kirby.
Millikin, Thomas N., Waynesburg.
Murray, Arthur T., Nineveh.
Norris, Robert Walton, Waynesburg.
Scott, Harry Chinsworth, Waynesburg.
Spragg, Charles William, Waynesburg.
Teagarden, George W., Wind Ridge.
Ullom, Frank Sellers, Waynesburg.
Wignet, Stephen E., Waynesburg.
Williams, Samuel T., Waynesburg.
Woods, Harold B., R. D., Harveys.

HUNTINGDON COUNTY SOCIETY

(Organized Aug. 14, 1849. Reorganized April 9, 1872.)

(Huntingdon is the post office when street address only is given.)

President...Fred R. Hutchison, Huntingdon.
V. Pres.....Fred P. Simpson, Mapleton Depot.
Secretary...John M. Beck, Alexandria.
Treasurer...George G. Harman, Huntingdon.
Reporter....John M. Keichline, Huntingdon.
Censors.....J. Roy St. Clair, Alexandria.
Charles R. Reiners, Huntingdon.
Cloyd G. Brumbaugh, Huntingdon.
Committee on Public Policy and Legislation:
Howard C. Frontz, Huntingdon.
George G. Harman, Huntingdon.
Frank L. Schum, 322 Penn St.
Prog. Com..William H. Sears, 514 Penn St.
Cloyd G. Brumbaugh, 805 Mifflin St.
John M. Keichline, Jr., 820 Fifth St.
Official Publication: The Bulletin.
Issued Monthly.
Editor: John M. Beck, Alexandria.
Asso. Editor: Cloyd G. Brumbaugh, 805 Mifflin St.

Stated meetings at the Huntingdon Club Rooms, Huntingdon, the second Thursday of each month at 2:30 p. m. Election of officers in December.

MEMBERS (36)

Banks, Clark W., Derry (Westmoreland Co.).
Beck, John M., Alexandria.
Bley, Henry, Hamburg (Berks Co.).
Brumbaugh, Cloyd G., 805 Mifflin St.
Bryson, Herbert J., Cassville.
Campbell, Robert B., Box 363, Mount Union.
Campbell, William J., 100 E. Penn Ave., Mt. Union.
Decker, Raymond R., 26 Chestnut St., Lewistown (Mifflin Co.).
Doebele, William A., 528 Penn St.
Dovey, Howard L., 830 W. Main St., Norristown (Montgomery Co.).

Evans, A. Hank, Saxton (Bedford Co.).
Frontz, Howard C., 500 Mifflin St.
Genung, Benjamin W., James Creek.
Green, Edward H., 74 Browne St., Brookline, Mass.
Guillard, Frank, Saxton.
Harman, George G., 523 Penn St.
Hart, Joseph, Dudley.
Herkness, John S., 21 E. Penn Ave., Mount Union.
Horton, Harold G., Saltillo.
Hutchison, Fred R., Seventh and Washington Sts.
Johnston, James M., 813 Mifflin St.
Keichline, John M., Jr., 820 Fifth St.
Koshland, James G., 621 Washington St.
Locke, Howard V., Orbisonia.
McClain, Charles A. Roe, 117 West Shirley St., Mt. Union.
Morgan, Marshall B., Sixth and Penn Sts.
Newlin, Gladys Wright, 600 Washington St.
Plymire, I. Swartz, Petersburg.
Reiners, Charles R., Huntingdon.
Richards, Frank L., 527 Penn St.
St. Clair, James Roy, Alexandria.
Schum, Frank L., 322 Penn St.
Sears, William Hardin, 514 Penn St.
Simpson, Fred P., Mapleton Depot.
Waite, Alvin R., Sixth and Mifflin Sts.
Wilson, Harry C., Warriors Mark.

INDIANA COUNTY SOCIETY

(Organized July 21, 1858.)

President...Alexander M. Stewart, Indiana.
1st V. Pres..C. Paul Reed, Indiana.
2d V. Pres...Thomas J. McNelis, Homer City.
Secretary...James M. Torrence, Indiana.
Treasurer...Medus M. Davis, Indiana.
Cor. Sec....Frederick M. St. Clair, Indiana.
Reporter....James M. Torrence, Indiana.
Censors.....George E. Simpson, Indiana.
Charles E. Rink, Indiana.
Charles H. Kirk, Homer City.
Committee on Public Health Legislation:
George E. Simpson, Indiana.
William L. Shields, Kent.
LeRoy Coolidge, Clymer.

Meetings second Thursday of each month in Elks Club Rooms, Indiana.

MEMBERS (60)

Ansley, William B., Saltsburg.
Bee, Charles H., Indiana.
Boden, Todd R., R. D., McIntire.
Bushnell, Emerson M., Black Lick.
Buterbaugh, Howard B., Indiana.
Carson, Jason W., Indiana.
Clark, Albert W., Indiana.
Coe, Benjamin F., 206 N. Sixth St., Indiana.
Coolidge, Leroy E., Clymer.
Davis, Medus M., Indiana.
Dodson, William E., Indiana.
Elkin, John A., Smicksburg.
Everwine, J. Merle, Leechburg (Armstrong Co.).
Fisher, James G., Plumville.
Gates, Dunn William, Indiana.
Glasser, James Clair, Dixonville.
Gourley, John C., Windber (Somerset Co.).
Griffith, Wilbert E., Iselin.
Haegle, Edward A., Commodore.
Heiser, William H., Alverda.
Hileman, Elmer E., Hillsdale.
Hotham, H. DeV., Saltsburg.
Johns, William, 1236 Franklin Ave., Wilkinsburg (Allegheny Co.).
Kirk, Charles H., Homer City.
Lewis E. Budd, Glen Campbell.
Lewis, Ray N., Apollo (Armstrong Co.).
Lloyd, Harvey W., Starford.
Lyon, George R., Heilwood.
Lytle, Ralph M., Saltsburg.
McCreight, William S., Blairsville.
McFarlane, Joseph P., Vintondale.
McNelis, Thomas J., Homer City.
Miller, John S., Clymer.
Moore, Frank Fisher, Homer City.
Mulligan, Augustine J., Creekside.
Neal, Harry B., Indiana.
Onstott, Elmer E., Saltsburg.
Peterman, James Harvey, Cherry Tree.
Peters, William F., Homer City.
Raymond, Malcolm L., Waterman.
Reed, Charles Paul, Indiana.
Reilly, Francis, Claghorne.
Rink, Charles E., Indiana.
Rutledge, Albert T., Blairsville.
St. Clair, John M., Indiana.
St. Clair, Frederick W., Indiana.
Salisbury, William John, Hyndman, (Bedford Co.).
Shields, William L., Kent.
Simpson, George E., Indiana.
Simpson, William A., Indiana.
Smith, Clark M., Plumville.
Smith, H. Boydston, Blairsville.
Smith, John Henry, 410 E. Main St., Bradford (McKean Co.).
Stevenson, Frank B., Indiana.
Stewart, Alexander H., Box 85, Indiana.
Stewart, John M., Marion Center.
Sutton, M. Alva, Avonmore (Westmoreland Co.).
Torrence, James M., Indiana.
Weitzel, William F., Indiana.
Widdowson, William Charles, Black Lick.

JEFFERSON COUNTY SOCIETY

(Organized Sept. 11, 1877. Incorporated April 16, 1887.)

President...Irvin R. Mohney, Brookville.
1st V. Pres..Alverdi J. Simpson, Summerville.
2d V. Pres...James C. Borland, Falls Creek.
Sec.-Treas...Norman C. Mills, Eleanor.
Reporter....William A. Hill, Reynoldsville.
Censors.....James B. Neale, Reynoldsville.
Harry B. King, Reynoldsville.
John H. Murray, Punxsutawney.
Exec. Com..Irvin R. Mohney, Brookville.
Norman C. Mills, Eleanor.
Spencer M. Free, Dubois.
Committee on Public Policy and Legislation:
Spencer M. Free, Dubois.
Wayne L. Snyder, Brookville.
Alverdi J. Simpson, Summerville.
James C. Borland, Falls Creek.
Prog. Com..John H. Murray, Punxsutawney.
Joseph P. Benson, Punxsutawney.
John E. Grube, Punxsutawney.
Norman C. Mills, Eleanor.

Stated meetings the second Thursday of each month at place determined by vote. Election of officers in January.

MEMBERS (50)

Benson, Francis L., Punxsutawney.
Benson, Joseph P., Punxsutawney.
Beyer, S. Meigs, Punxsutawney.
Booher, Jay C., Falls Creek (Clearfield Co.).
Borland, James C., Falls Creek (Clearfield Co.).
Bowser, Ira D., Reynoldsville.
Davenport, Samuel M., Dubois (Clearfield Co.).
Dick, Walter, Brookville.
Free, Spencer M., Dubois (Clearfield Co.).
Fulton, Howard C., Dubois (Clearfield Co.).
Gatti, William I. Punxsutawney.
Gourley, Russell C., Punxsutawney.
Grube, John E., Punxsutawney.

Grube, J. Miles, Punxsutawney.
Heid, Edward F., Brockwayville.
Hill, William A., Reynoldsville.
Hughes, Edgar L., Helvetia.
Jaquish, Elvin W., Punxsutawney.
Johnstone, Charles W., Dubois (Clearfield Co.).
Jordan, Ralph Ross, Dubois (Clearfield Co.).
Kearney, J. Gardner, Reynoldsville.
King, Harry B., Reynoldsville.
Kuhns, John M., Ramsaytown.
Lorenzo, Frank A., Punxsutawney.
McGarrah, Harry B., Timblin.
Maine, Charles L., Dubois (Clearfield Co.).
Mills, Norman C., Eleanor.
Mohney, Irvin R., Brookville.
Murray, John H., Punxsutawney.
Musser, Guy M., Punxsutawney.
Neale, James B., Reynoldsville.
Newcome, John A., Vandergrift (Westmoreland Co.).
Newcome, William C., Big Run.
O'Neal, Harry A., Brookville.
Pringle, Francis D., Punxsutawney.
Raine, J. Franklin, Sykesville.
Ritter, Daniel, Indiana (Indiana Co.).
Sayers, John C., Reynoldsville.
Schumacher, Forrest L., Dubois (Clearfield Co.).
Scott, Clinton H., Brookville.
Simpson, Alverdi J., Summerville.
Smathers, Francis C., Punxsutawney.
Snyder, Wayne L., Brookville.
Stauffer, John A., Rossiter (Indiana Co.).
Stevenson, Charles R., Delancey.
Thompson, Harry P., Brookville.
Vosburg, Harry A., Jr., Arnot (Tioga Co.).
Walter, Jacob A., Punxsutawney.
Whitehill, Alexander C., Brookville.

JUNIATA COUNTY SOCIETY

(Organized Aug. 7, 1907)

President...John W. Deckard, Richfield.
1st V. Pres..William H. Banks, Mifflintown.
2d V. Pres...Isaac G. Headings, McAlisterville.
Secretary...Brady F. Long, Mifflin.
Treasurer...Isaac G. Headings, McAlisterville.
Reporter....Benjamin H. Ritter, McCoysville.
Censors.....Amos W. Shelley, Port Royal.
William H. Haines, Thompsontown.
Committee on Public Policy and Legislation:
Isaac G. Headings, McAlisterville.
William H. Banks, Mifflintown.

Meetings held the first Wednesday of January, April, July and October at 1 p. m., in the Tuscarora Club Rooms, Mifflintown. Election of officers in January.

MEMBERS (11)

Banks, William H., Mifflintown.
Brown, Joseph Stewart, Okeson.
Deckard, John W., Richfield.
Haines, William H., Thompsontown.
Headings, Isaac G., McAlisterville.
Long, Brady F., Mifflin.
Metz, Samuel F., Thompsontown.
Quig, Robert M., East Waterford.
Ritter, Benjamin H., McCoysville.
Shelley, Amos W., Port Royal.
Shelley, Penrose H., Port Royal.

LACKAWANNA COUNTY SOCIETY

(Organized Nov. 20. 1878.)

(Scranton is the post office when street address only is given.)

President...James D. Lewis. 204 W. Market St.
1st V. Pres..James J. O'Connor, Olyphant.
2d V. Pres...D. Webster Evans, 157 S. Main St.
Librarian....Irwin W. Severson, 225 Jefferson Ave.
Sec., Treas.
& Rept....Jacob J. Lonsdorf, Jr., Cor. Pittston Ave. and Beech St.
Censors.....Charles Falkowsky, Jr., 327 Spruce St.
Joseph C. Reifsnyder, Connell Bldg.
Trustees....John B. Corser, 345 Wyoming Ave.
Daniel A. Capwell, Scranton Real Estate Bldg.
Lowell M. Gates, 802 Mulberry St.
Morgan J. Williams, 302 S. Main Ave.
Addison W. Smith, 219 Jefferson Ave.
Committee on Public Policy and Legislation:
Harry W. Albertson, 2416 N. Main Ave.
Joseph C. Reifsnyder, Connell Bldg.
Frank R. Wheelock, 834 N. Main Ave.
Herbert D. Gardner, 345 Wyoming Ave.
Leonard G. Redding, Scranton Life Bldg.
Patrick J. McDonald, Connell Bldg.
William R. Davies, Traders National Bank Bldg.
Official Publication: The Medical Society Reporter.
Issued Monthly.
Managing Editor: Martin T. O'Malley, 306 N. Washington Ave.
Associate Editor: John W. Grant, Dickson City.

Regular weekly meetings are held on Tuesday evenings at 8:45 in the society's room, Real Estate Building, 136 North Washington Ave., Scranton, except July and August. Election of officers in January.

MEMBERS (185)

Albertson, Harry W., 2416 N. Main Ave.
Allwein, John H., Real Estate Ex. Bldg.
Anderson, U. Grant, Carbondale.
Armstrong, Ralph H., Peckville.
Arndt, Franklin F., 711 Monroe Ave.
Barder, John J., 131 Hickory St.
Bartecchi, F. A., Gibbons St.
Bendick, John J., Olyphant.
Berge, William Henry, Room 210 Connell Bldg.
Berney, Daniel E., Connell Bldg.
Bishop, Frederick J., 220 Connell Bldg.
Brennan, John J., 230 South Main Ave.
Breskman, Louis, 820 Main St., Dickson City.
Brown, Carl G., 322 Mulberry St.
Bryant, Frank G., 1107 Lafayette St.
Burns, Reed, 802 Jefferson Ave.
Butzner, John Decker, 506 Dime Bank Bldg.
Cantor, Aaron S., Dickson City.
Capwell, Daniel A., Real Estate Bldg.
Carr, Joseph A., Olyphant.
Carroll, Frank, 301 West Market St.
Carroll, Michael A., Rookery Bldg.
Catalano, Gregorio, Dunmore.
Cavill, Francis T., Jessup.
Clark, George A., Connell Bldg.
Clarke, Anna C., 320 Jefferson Ave.
Conarton, Joseph L., Mayfield.
Conway, William H., Olyphant.
Corcoran, W. J., Old Forge.
Cornell, Harvey B., 117 N. Main Ave.
Corser, John B., 1745 N. Washington Ave.
Costella, Bernard E., Vandling.
Cross, Friend A., 310 Dime Bank Bldg.
Curtin, Eugene A., Connell Bldg.
Davies, Emlyn Thomas, Old Forge.
Davies, Philip J., 608 South Main Ave.
Davies, William Rowland. Traders Bank Bldg.
Davis, Arthur E., Hotel Holland.
Davis, William T., County Savings Bank Bldg.
Dean, G. Edgar, 327 N. Washington Ave.
Deantonio, Emilio, Box 68, 346 Franklin Ave.
Dolan, William K., 633 N. Washington Ave.
Donahoe, John P., 233 Connell Bldg.
Dougherty, James J., Avoca (Luzerne Co).

Douglas, J. Nelson, 1230 N. Main Ave.
Druffner, Lewis C., Avoca (Luzerne Co.).
Edwards, Edward E., Taylor.
Evans, Daniel W., 157 S. Main Ave.
Falkowsky, Charles, Jr., 327 Spruce St.
Finkelstein, Murray, Olyphant.
Flynn, Robert J., 551 Fourth Ave.
Frey, Clarence Leslie, Dime Bank Bldg.
Fulton, William G., 433 Wyoming Ave.
Gardner, Arthur P., Dime Bank Bldg.
Gardner, Herbert D., Scranton Private Hospital.
Garvey, Frank C., Connell Bldg.
Garvey, Raymond J., Minooka.
Gates, Lowell M., 802 Mulberry St.
Gibbons, Leo P., Connell Bldg.
Gibbons, Myles A., Dunmore.
Gibbs, Howard W., 546 Adams Ave.
Gibbs, Louis H., 217 S. Main St.
Ginley, Frank, Dunmore.
Goodfriend, Harry, 325 Adams Ave.
Goodman, Isaac, 312 N. Washington Ave.
Grant, John W., Dickson City.
Griffiths, John L., Taylor.
Grover, John B., Peckville.
Hager, Albert E., Taylor.
Halpert, Henry, Connell Bldg.
Heston, Patrick J., 325 Pittston Ave.
Higgins, G. L., Carbondale.
Hollister, Frederick P., 508 Dime Bank Bldg.
Horger, Ulrich P., Old Forge.
Jackson, Byron, County Bank Bldg.
Jenkins, David J., 234 S. Main Ave.
Jones, Harry, Dickson City.
Kay, Thomas W., 506 Dime Bank Bldg.
Kearney, John V., Archbald.
Kearney, Patrick H., 312 Wyoming Ave.
Keller, William E., 510 Clay Ave.
Kelley, John F., 643 Adams Ave.
Kennedy, Lucius Carter, 1030 Green Ridge St.
Kerstetter, Paul F., 1009 S. Main Ave.
Kiesel, Ernest L., 515 Lackawanna Ave.
Knedler, J. Warren, Moscow.
Kraemer, Harry M., State Hospital.
Kulczycki, John, 429 Pittston Ave.
Leopardi, Enrico Alfredo, Old Forge.
Lewis, James D., 204 W. Market St.
Lindsay, George G., Scranton Life Bldg.
Lloyd, Rossiter J., Olyphant.
Lonsdorf, Jacob John, Jr., 230 Stephen Ave.
Lynch, William, Farview (Wayne Co.).
McDonnell, Patrick J., Connell Bldg.
McGinty, Edward F., Olyphant.
McGuire, J. P., Forest City (Susquehanna Co.).
McKeage, Robert B., Traders Bank Bldg.
McLaine, Edward A., 433 Wyoming Ave.
MacDougall, William L., Laceyville (Wyoming Co.).
Mackey, Robert B., Waverly.
Mackey, Robert N., Clark's Summit.
Mackintosh, James A., Archbald.
Manley, Peter C., 1326 Pittston Ave.
Milkman, Louis A., 1917 N. Main Ave.
Mittleman, Harry M., 504 Main St., Duryea.
Monie, Thomas, Archbald.
Moyer, Jacob C., 201 Brooks Bldg.
Moylan, Francis P., 216 S. Main Ave.
Murray, Gilbert D., County Savings Bank Bldg.
Murrin, Connell Edward, 732 Pittston Ave.
Murphy, Frank L., Dunmore.
Myer, William W., Old Forge.
Myers, Samuel Z., 416 Dime Bank Bldg.
Nealon, Leo A., 425 Prospect Ave.
Newbury, Nelson E., 1515 Capouse Ave.
Newton, James R., 311 Spruce St.
Niles, Frank L., Carbondale.
Niles, John S., Carbondale.
Noecker, Charles B., 216 Connell Bldg.
Noone, Michael J., 2060 N. Main Ave.
Novak, Albert A., Throop.
Nowicki, Zygmunt, 1101 Pittston Ave.
O'Connor, James J., Olyphant.
O'Malley, Martin T., 306 N. Washington Ave.
O'Malley, William J., 1406 N. Main St.
O'Toole, James E., 124 S. Seventh St.
Peck, John L., 524 Vine St.
Peck, Welland A., 2604 N. Main Ave.
Peet, Ernest L., 102 W. Market St.
Pentecost, Milton I., 214-215 Traders Bank Bldg.
Price, John J., Olyphant.
Rea, James L., Jr., 1752 Sanderson Ave.
Rebhorn, Earl H., 713 Quincey Ave.
Redding, Leonard G., Scranton Life Bldg.
Reedy, Walter M., 234 Connell Bldg.
Reifsnyder, Joseph C., Connell Bldg.
Ritz, Reinhart J., 715 N. Main Ave.
Rivenburg, Sidney W., Kohima, Assam, India.
Robinson, Frederick G., Scranton Life Bldg.
Robison, John I., Union Bank Bldg.
Rodham, Thomas B., 1820 N. Main Ave.
Rosenberg, Milton M., 616 N. Washington Ave.
Ruddy, James P. H., Dime Bank Bldg.
Rutherford, Thomas A., Clark's Summit.
Salmon, William J. G., Old Forge.
Sedlak, Frank J., 950 Prescott Ave.
Severson, Irwin W., 647 N. Main St.
Shaul, Elmer B., 345 Wyoming Ave.
Shepherd, Richard C., 633 E. Market St.
Shlanta, Vladimir A., Olyphant.
Silverstein, Nathan, 540 Wyoming Avenue.
Skeoch, James R., 1000 Webster Ave.
Smith, Addison W., 1116 Union National Bank Bldg.
Stevens, Floyd W., 135 S. Blakely St., Dunmore.
Sturge, Edgar, 1200 Providence Rd.
Sullivan, John J., Jr., Traders Bank Bldg.
Sureth, Theodore, Traders Bank Bldg.
Swift, Frank L., Dunmore.
Thomson, Charles E., Scranton Private Hospital.
Thompson, James J., Carbondale.
Timlin, John J., Old Forge.
Vail, Howard L., 516 Spruce St.
Van Doren, William, Archbald.
Van Sickle, Frederick L., 212 North Third St., Harrisburg (Dauphin Co.).
Van Vechten, George J, Olyphant
Villone, Joseph, 206 Chestnut St.
Von Poswik, Gisela, 211 Jefferson Ave.
Vorhees, Samuel H., Peckville.
Wahl, John C., 328 Pittston Ave.
Wainwright, Jonathan M., Co. Savings Bank Bldg.
Walker, Patrick H., 509 Luzerne St.
Wall, Russell T., 516 Spruce St.
Walsh, Anthony T., 306 Pittston Ave.
Watson, Stephen S., Moosic.
Webb, Daniel A., 234 Connell Bldg.
Wheelock, Frank R., 834 N. Main Ave.
White, J. Norman, 832 N. Main Ave.
Williams, Morgan J., 302 S. Main Ave.
Wilson, John D., 921 Olive Street.
Winter, Stanley, Avoca (Luzerne Co.).
Wormser, Bernard B., Board of Trade Bldg.
Zeller, Charles A., Dalton.
Zychowicz, John F., 1118 Green Ridge St.

LANCASTER COUNTY SOCIETY

(Organized Jan. 26, 1844. Incorporated April 15, 1844.)

(Lancaster is the post office when street address only is given.)

President...Joseph P. Kennedy, Columbia.
1st V. Pres..Jacob E. Hostetter, Gap, R. D. 1.
2d V. Pres...John D. Helm, New Providence.
Sec.-Treas...Horace C. Kinzer, 128 N. Duke St.
Reporter....Walter D. Blankenship, 144 E. Chestnut

Censors.....J. Paul Roebuck, 233 N. Duke St.
Jacob R. Lehman, Mountville.
Henry Walter, Rothsville.
Trustees....Frank G. Hartman, 136 N. Duke St.
Frank Alleman, 420 W. Chestnut St.
Lewis M. Bryson, Paradise.
Committee on Legal Affairs:
Edgar J. Stein, 225 N. Duke St.
Walter D. Blankenship, 144 E. Chestnut St.
Harry B. Roop, Columbia.
Committee on Public Policy and Legislation:
Theodore B. Appel, 305 N. Duke St.
Jacob D. Hershey, Manheim.
J. Paul Roebuck, 233 N. Duke St.
Official Publication: The Bulletin.
Issued Monthly.
Editor: Walter D. Blankenship, 144 E. Chestnut St.

Stated meetings at Medical Club Rooms, 16 South Prince St., Lancaster, the first Wednesday of each month, at 2 p.m. Election of officers in January.

MEMBERS (129)

Achey, Frederick A., 42 S. Prince St.
Alexander, Guy Levis, Clayton, Del.
Alleman, Frank, 420 W. Chestnut St.
Appel, Theodore B., 305 N. Duke St.
Armstrong, James, 449 Locust St., Columbia.
Atlee, John L., 37 E. Orange St.
Baer, Walter K., 223 N. Duke St.
Barsumian, Hagop G., 205 E. King St.
Binkley, William G., Washington Boro.
Bitzer, Newton E., 236 W. Chestnut St.
Blankenship, Walter D., 144 E. Chestnut St.
Blough, Henry K., Elizabethtown.
Bolenius, Robert M., 48 S. Queen St.
Bowman, Abraham G., 318 N. Duke St.
Breneman, Park P., 146 E. Walnut St.
Bricker, Elizabeth Bausman, Lititz.
Bryson, Howard R., 246 W. Orange St.
Bryson, Lewis M., Paradise.
Cary, Dale Emerson, 204 E. King St.
Davis, Henry B., 241 E. King St.
Davis, Miles L., 114 N. Prince St.
Day, George E., Strasburg.
Deck, Roy, 38 E. Walnut St.
Denlinger, Maurice M., Rohrerstown.
Denney, John D., Columbia.
Dunlap, J. Francis, Manheim.
Duttenhofer, Charles S., New Holland.
Farmer, Clarence R., 573 W. Lemon St.
Fox, William Garfield, 48 E. Orange St.
Frew, George W. H., Paradise.
Garretson, William, East Petersburg.
Garvey, Thomas O., 443 W. Chestnut St.
Good, Benjamin F., Washington Boro, R. D. 1.
Hamaker, William B., 235 N. Duke St.
Harter, G. Alvin, Maytown.
Hartman, Frank G., 136 N. Duke St.
Heckman, Ira D., Denver.
Heller, Samuel H., 10 N. Mulberry St.
Helm, Charles E., Quarryville.
Helm, John D., New Providence.
Herr, Ambrose J., 441 College Ave.
Herr, Benjamin F., Millersville.
Herr, John T., Landisville.
Herr, William H., 226 N. Duke St.
Herr, William M., 224 W. Orange St.
Hershey, George Blair, Gap.
Hershey, Jacob D., Manheim.
Hertz, John L., Lititz.
Hess, Ammon Gross, Mountville.
Hess, William G., c/o Water and Power Co., Holtwood.
Hostetter, Jacob E., Gap, R. D. 1.
Hyus, Edmund B., 130 E. Walnut St.
Ingram, Theodore E., Marietta.
Irwin, Thaddeus S., Christiana.
Kendig, Benjamin E., Salunga.
Kendig, Jerome S., Salunga.
Kennedy, Joseph P., Columbia.
Keylor, Walter N., Leacock.
Kinard, George W., Leacock.
Kinard, George C., Lincoln.
Kinzer, Horace Clemens, 128 N. Duke St.
Kohlbraker, George H., 130 E. Main St., Ephrata.
Leaman, Walter J., Leaman Place.
Lefever, Willis Hess, 220 N. Duke St.
Leh, Homer D., 222 N. Duke St.
Lehman, Jacob R., Mountville.
Leslie, Leroy K., Bareville.
Lightner, Isaac Newton, Ephrata.
Long, Howard A., Brickerville.
Lowell, Francis Carroll, 113 E. Walnut St.
Markel, Chester F., Columbia.
Martin, Daniel Webster, Manheim.
Martin, Dwight C., Lititz.
Martin, John R. S., Jr., 1915 Wallace St., Phila. (Phila. Co.).
Mentzer, John F., Ephrata.
Miller, Samuel W., 217 E. King St.
Moorehouse, William G., 23 S. West End Ave.
Mowery, Harry A., Marietta.
Musser, J. Henry, Lampeter.
Mylin, Walter F., Intercourse.
Netcher, Charles E., 46 N. Prince St.
Noble, Edward L., 145 N. Duke St.
Pickel, J. Harry, Millersville.
Pomerantz, Harry, 26 E. Walnut St.
Posey, David C., Christiana.
Posey, Silas Robert, Lititz.
Price, John B., 134 N. Duke St.
Reemsnyder, Byron J., Ephrata, R. D. 3.
Reemsnyder, Henry G., Ephrata.
Reeser, Norman B., Lititz.
Reeser, Richard, Columbia.
Ressler, Jacob L., Bird-in-Hand.
Ringwalt, Martin, Rohrerstown.
Roebuck, J. Paul, 233 N. Duke St.
Rohrer, George R., 45 E. Orange St.
Roop, Harry B., Columbia.
Royer, Jacob W., Terre Hill.
Russell, Evans D., Reamstown.
Shaeffer, Peter F., Christiana.
Shartle, J. Miller, 30 S. Prince St.
Shear, Lewis M., 601 Manor St.
Shookers, Tobias C., 146 N. Prince St.
Simons, Isaac Shirk, Elizabethtown.
Smith, Edward K., Millersville.
Snyder, Asher F., Mount Joy.
Stahr, Charles P., 139 E. Walnut St.
Steele, Marshall K., Quarryville.
Stein, Edgar J., 225 N. Duke St.
Stever, John C., Bainbridge.
Steward, William J., State Inst., Pennhurst (Chester Co.).
Stoler, George W., 135 N. Duke St.
Stubbs, Ambrose H., Peach Bottom.
Sultzbach, Henry Miller, 231 E. King St.
Swab, Robert D., 23 E. Walnut St.
Thome, Winfield M., Mount Joy.
Tinney, William Scott, Strasburg.
Treichler, Vere, Elizabethtown.
Trexler, Jacob F., 134 N. Prince St.
Walter, Adam V., Brownstown.
Walter, Henry, Rothsville.
Wentz, Paul R., New Holland.
Winters, John L., Blue Ball.
Witmer, Charles Howard, 126 E. Chestnut St.
Witmer, Elias H., Neffsville.
Workman, William M., Mount Joy.
Yoder, Mahlon Harold, Lititz.
Yost, John W., Bethesda.
Zeigler, James P., Mount Joy.
Ziemer, Harry S., Adamstown.

LAWRENCE COUNTY SOCIETY

(Organized Oct. 7, 1897.)

President...Henry C. Mitchell, New Castle.
1st V. Pres..F. Earle Eakin, New Castle.
2d V. Pres...Brant E. Sankey, New Castle.
Secretary...William A. Womer, New Castle.
Treasurer...William C. Burchfield, New Castle.
Censors.....Henry E. Helling, Ellwood City.
John Foster, New Castle.
Walter L. Campbell, New Castle.
Committee on Public Policy and Legislation:
C. Fenwick McDowell, New Castle.
Harry W. McKee, New Castle.
Colin M. Dumm, Ellwood City.
Official Publication: The Bulletin of the Lawrence County Medical Society.
Issued Monthly.
Editor: William A. Womer, New Castle.

Society meetings in society room in Greer Block, New Castle, on the first Thursday of every month at 8:30 p. m. Election of officers in January.

MEMBERS (57)

Blackwood, James M., New Castle.
Boak, Robert G., New Castle.
Brice, Patrick J., New Castle.
Brown, Jesse O., St. Petersburg, Florida.
Burchfield, William Clinton, New Castle.
Campbell, Frank D., Hillsville.
Campbell, Walter L., 615 Croton Ave., New Castle.
Clark, William A., Jr., New Wilmington.
Cleland, William D., New Castle.
Cook, Katharine M., New Wilmington.
Cooper, Jesse R., New Castle.
Davis, Charles W., New Castle.
Dean, Hollis G., New Castle.
Douthett, James C. B., New Castle.
Duff, Thomas, Wampum.
Eagleson, R. M., New Castle.
Eakin, F. Earle, New Castle.
Flannery, Charles F., New Castle.
Foster, John, 36 Mercer St., New Castle.
Grossman, Louis W., New Castle.
Guy, Franklin W., 311 N. Liberty St., New Castle.
Harper, H. Cyrus, New Castle.
Helling, Henry E., Ellwood City.
Hunt, Charles B., 473 E. Washington St., New Castle.
Iseman, Charles M., Ellwood City.
Kaplan, Eliah, New Castle.
Lindley, Don C., New Castle.
McComb, Edwin C., Greer Block, New Castle.
McCune, Samuel R. W., New Castle.
McDowell, C. Fenwick, New Castle.
McGiffin, Matthew N., New Bedford.
McKee, Harry W., New Castle.
McLaughry, Elizabeth M., New Castle.
Mitchell, Henry C., New Castle.
Perry, Samuel W., 225 E. Long Ave., New Castle.
Pollock, James K., New Castle.
Popp, James M., New Castle.
Ramsey, Wayne S., Pearson House, New Castle.
Reed, Charles A., 26 N. Mercer St., New Castle.
Sankey, Brant E., 118 N. Jefferson St., New Castle.
Shaffer, Thomas M., New Castle.
Shoaff, Paris, New Castle.
Smyser, Charles J., New Wilmington.
Snyder, Ernest Ulysses, Wallace Block, New Castle.
Steen, William L., N. Jefferson St., New Castle.
Trainor, Charles E., 115 E. North St., New Castle.
Urey, Frank F., E. Washington St., New Castle.
Urmson, Allan W., New Castle.
Wallace, Robert A., New Castle.
Wallace, William D., 217 Wallace Block, New Castle.
Warner, Samuel L., New Castle. .
Williams, Thomas V., New Castle.
Wilson, Henry R., 373 Washington St., New Castle.
Wilson, Loyal W., New Castle.
Womer, William A., New Castle.
Worral, Emma Hodge, Pulaski.
Zerner, H. Elmore, New Castle.

LEBANON COUNTY SOCIETY

(Organized March, 1847.)

President...John E. Marshall, Lebanon.
1st V. Pres..John L. Groh, Lebanon.
2d V. Pres...David S. Bordner, Palmyra.
Secretary...W. Horace Means, Lebanon.
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Committee on Public Policy and Legislation:
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MEMBERS (36)

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Beckley, Joseph R., Lebanon.
Boltz, Elias K., Lebanon.
Bordner, David Stanton, Palmyra.
Brubaker, Walter H., Lebanon.
Bryner, John H., Quentin.
Bucher, John C., Lebanon.
Frankhauser, Agnew F., Myerstown.
Fretz, Milton B., Palmyra.
Gingrich, Edward H., Lebanon.
Groh, John B., Lebanon.
Groh, John L., Lebanon,
Guilford, William M., Lebanon.
Kaufman, Frederick S., Lebanon.
Kerr, J. DeWitt, Lebanon.
Light, John J., Lebanon.
Light, Lincoln R., Lebanon.
Light, Seth A., 604 Cumberland St., Lebanon.
Marshall, Edwin Bell, Annville.
Marshall, John E., Lebanon.
Maulfair, Harvey E., Lebanon.
Means, W. Horace, High St., Lebanon.
Rank, David M., Annville.
Reich, Paul D., Jonestown.
Reiter, Albert S., Myerstown.
Risser, Ulysses G., Campbelltown.
Rutherford, Frank A., 518 Cumberland St., Lebanon.
Saylor, Clyde J., Lebanon.
Schultz, Abner W., Lebanon.
Shope, Samuel Z., 2018 Chestnut St., Philadelphia (Phila. Co.).
Strickler, Charles M, Lebanon.
Walter, John, Lebanon.
Weiss, Alfred S., 630 Chestnut St., Lebanon.
Witmer, Franklin B., Lebanon.
Zimmerman, Curtis L., Lebanon.
Zimmerman, Frank D., Schaefferstown.

LEHIGH COUNTY SOCIETY

(Organized 1850.)

(Allentown is the post office when street address only is given.)

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Censors.....William J. Hertz, 125 N. Eighth St.
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Committee on Public Policy and Legislation:
Thomas H. Weaber, 211 N. Eighth St.
Martin J. Backenstoe, Emaus.
Charles H. Muschlitz, Slatingdon.
Official Publication: Lehigh County Medical Bulletin.
Issued Monthly.
Editor: J. Treichler Butz, Room 311, City Hall.

Stated meetings at the Allentown and Sacred Heart Hospitals, Allentown, on the second Tuesday of each month at 2:30 p. m. Election of officers in January.

MEMBERS (104)

Albright, Roderick E., 135 S. Fifth St.
Bachman, Rowland W., 301 N. Second St.
Backenstoe, Martin J., Emaus.
Backenstoe, William A., Edwaleni, Alfred Co., Natal, S. Africa.
Baer, Harry A. D., 1146 Hamilton St.
Baker, Harry L., Catasauqua.
Bausch, Elmer H., 252 N. 7th St.
Bausch, Frederick R., 109 N. Second St.
Beck, Foster A., 402 Hanover Ave.
Boyer, Frank S., 16 N. Second St.
Boyer, George H., 528 N. Sixth St.
Brady, Walter C., 953 Hamilton St.
Brossman, Martin W., 102 North 10th St.
Bruch, Elmer C., 1320 W. Broad St., Bethlehem (Northampton Co.).
Butz, J. Treichler, 304 N. Ninth St.
Butz, Warren H., 1338 Walnut St.
Cook, Thomas W., 631 St. John St.
Dickenshied, Eugene H., 14 N. Seventh St.
Diefenderfer, Alan L., Slatington.
Eckert, John T., 438 N. Sixth St.
Erdman, Howard B., Macungie.
Eshbach, William W., 2604 Walnut St.
Feldhoff, Edward W., 1224 Turner St.
Fetherolf, Frederick A., 941 Hamilton St.
Fetherolf, William J., Steinsville.
Fogel, Solon C. B., 36 N. Twelfth St.
Fox, Charles R., 1016 N. Main St., Northampton (Northampton Co.).
Gangewere, Victor J., 1725 Hanover Ave.
Gault, Edwin S., Sacred Heart Hospital.
Gearhart, Ethan A., 547 N. Eleventh St.
Gerberich, Arthur F., Limeport.
Guth, Henry E., Orefield.
Haas, Milton J., 1353 Chew St.
Haff, Charles A., Northampton (Northampton Co.).
Harding, Frederick B., 959 Hamilton St.
Hartzell, William H., 22 N. Eighth St.
Hausman, William A., Jr., 1116 Hamilton St.
Hendricks, Augustus W., 453 N. Sixth St.
Henry, Charles O., 102 N. Tenth St.
Herbst, William F., 28 N. Fifth St.
Hersh, Harold E., 36 N. Eighth St.
Hertz, William J., 125 N. Eighth St.
Holben, Franklin J., Schnecksville.
Hornbeck, James L., Catasauqua.
Huebner, Irwin F., 802 Walnut St.
Jordan, Henry D., 544 N. Sixth St.
Keim, Harry J. S., Catasauqua.
Kemp, Maurice, 128 S. Madison St.
Kern, Alvin J., Slatington.
Kern, Harrison B., Slatington.
King, Robert C., Hellertown (Northampton Co.).
Kistler, Jesse G., 1615 Chew St.
Kistler, Nelson F., 206 N. Ninth St.
Kleckner, Martin S., 202 N. Eighth St.
Kline, Willard D., 24 N. Eighth St.
Klingaman, Harry E., Emaus.
Koch, Morris H., 1131 Linden St.
Kress, Palmer J., 24 S. Seventh St.
LaBarre, Louis C., 936 Hamilton St.
Lawall, Griffith S., 534 N. Sixth St.
Lear, John, 1038 Hamilton St.
Lowright, Wallace J., Center Valley.
McAvoy, Jeremiah F., Catasauqua.
Masonheimer, Willard C., 1314 Hamilton St.
Matz, John D., 26 S. Seventh St.
Merkle, Ralph F., 219 N. Seventh St.
Mickley, Howard P., Neffs.
Miller, Albert N., East Texas.
Miller, Mahlon G., Siegfried (Northampton Co.).
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Noble, John W., 36 N. Jefferson St.
Otto, Calvin J., 1314 Hamilton St.
Parmet, David H., 436 Tilghman St.
Peters, Nathaniel C., Cementon.
Peters, R. Cornelius, 402 N. Eighth St.
Peters, Warren J., 214 N. Thirteenth St.
Quinn, Sydney A., 753 N. Sixth St.
Reitz, Charles B., Palmerton (Carbon Co.).
Riegel, William A., Catasauqua.
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Rogers, Clarence C., 322 E. Hamilton St.
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Schaeffer, Forrest G., 143 N. Eighth St.
Schaeffer, Robert L., 32 N. Eighth St.
Schatz, William J., 1022 Walnut St.
Scheirer, Franklin B., 402 N. Sixth St.
Schlesman, Charles H., 216 N. Seventh St.
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Seiberling, George F., 956 Hamilton St.
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Smyth, Thomas L., 430 N. Second St.
Sowden, Edgar L., Slatedale.
Trexler, William B., Fullerton.
Troxell, William C., 502 N. Second St.
Weaber, Thomas H., 211 N. Eighth St.
Weaver, Aaron D., Macungie.
Weaver, Joseph M., 48 S. Tenth St.
Weida, Isadore J., Emaus.
Wentz, Frank R., 610 N. Sixth St.
Wickert, Clifford J., 47 S. Thirteenth St.
Young, Mark, 728 N. Seventh St.

LUZERNE COUNTY SOCIETY

(Organized March 4, 1861.)

(Wilkes-Barre is the post office when street address only is given.)

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V. Pres.....N. Louis Schappert, 57 S. Washington St.
Secretary...Edward W. Bixby, 61 W. Ross St.
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Censors.....Charles L. Ashley, 118 W. Main St., Plymouth.
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Charles Long, 33 S. Washington St.
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Daniel G. Robinhold, 1170 Wyoming Ave., Forty-Fort.
Peter P. Mayock, 70 S. Main St.
Committee on Public Health Legislation:
Malcolm C. Guthrie, 109 S. Franklin St.
Joseph J. Kocyan, 60 Hudson Road, Plains.
Edwin C. Bahnmiller, 122 Kidder St.
Official Publication: Transactions of the Luzerne County Medical Society.
Issued Annually.
Editor: Lewis H. Taylor, 83 S. Franklin St.

Stated scientific meetings in the Society's Building, South Franklin St., Wilkes-Barre, first and third Wednesdays of each month, except July and August, at 8:30 p. m. Election of officers last meeting in December. Business meetings second Wednesday of each month.

MEMBERS (221)

Adams, Erick A., 259 Dana St.
Ahlborn, Maurice B., 99 N. Franklin St.
Ashley, Charles L., 118 W. Main St., Plymouth.
Bahnmiller, Edwin C., 122 Kidder St.
Baker, Gordon E., 1250 Wyoming Ave., Forty Fort.
Banks, Henry W., 240 Maple St., Kingston.
Barney, Delbert, 55 N. Washington St.
Barton, A. Arthur, 20 Main St., Plains.
Beaver, James R., 100 Luzerne Ave., West Pittston.
Becker, Conrad J., 679 Hazel St.
Bennett, Clarence E., 14 Green St., Nanticoke.
Berge, William H., Avoca.
Biehl, Jefferson P., 34 Center Ave., Plymouth.
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Blazejewski, Stanley W., 46 S. Washington St.
Bossart, Merle F., W.-B. City Hospital.
Briggs, Miron L., Shickshinny.
Brooks, Allan C., 84 N. Franklin St.
Brooks, James, Main St., Plains.
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Buckman, Ernest U., 70 S. Franklin St.
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Burkhardt, George F., 109 S. Cedar St., Hazleton.
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Carter, William S., 15 W. Broad St., Hazleton.
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Clark, Robert N., 326 S. Main St.
Collmann, Xavier K., 93 E. North St.
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Connole, Joseph V., Miners' Bank Bldg.
Cook, Benjamin B., Wapwallopen.
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Corrigan, John J., 336 W. Broad St., Hazleton.
Corrigan, William H., 141 S. Washington St.
Costello, Edmund A., 72 Park Ave.
Creasy, Raymond C., 195 S. Franklin St.
Cressler, John Webster, 152 Hanover St.
Croop, Harry W., 234 Rutter Ave., Kingston.
Cuozzo, James A., 530 Carson St., Hazleton.
Dailey, Thomas J., 15½ W. Main St., Plymouth.
Daley, Daniel F., 214 Chestnut St., Kingston.
Danzer, William F., 226 W. Broad St., Hazleton.
Dattner, Abram, 289 N. Main St.
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Davis, William J., 225 Barney St.
Davison, William F., 31 Union St., Kingston.
Deibel, Henry W., 531 S. River St.
Dessen, Louis A., 145 N. Laurel St., Hazleton.
Dickinson, Charles S., Pottsville (Schuylkill Co.).
Dinkelspiel, Max R., 20 N. Franklin St.
Dixon, James S., 30 Broad St., Pittston.
Dodson, Boyd, 186 Dana St.
Dolphin, Joseph F., Miners' Bank Bldg.
Donnelly, Francis E., 8 Lee Park Ave.
Dougherty, Joseph P., 41 N. Main St., Ashley.
Doyle, William J., 558 Hazel Ave.
Drake, George R., 135 W. Main St., Plymouth.
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Edwards, Lewis, 790 Market St., Kingston.
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Ernst, Charles H., 71 Academy St.
Eshelman, Fayette C., 436 Miner's Bank Bldg.
Evans, H. Irvin, Ashley.
Everett, Shem A., Freeland.
Fagan, Patrick E., 626 Alter St., Hazleton.
Farrar, John K., Audenried (Carbon Co.).
Fischer, Herman A., 316 S. Washington St.
Flanagan, Edward J., 205 Blackman St.
Fleming, Thomas F., 1210 Wyoming Ave., Exeter Boro.
Foss, Walter B., 36 N. Main St., Ashley.
Foster, Alfred E., 271 Barney St.
Foster, Wilbur A., Mountain Top.
Frederick, Daniel F., Ashley.
Freeman, Stanley L., 26 W. Ross St.
French, Samuel, Miners' Bank Bldg.
Gagion, Thomas R., 18 N. Main St., Pittston.
Geist, James W., 529 S. Franklin St.
Gibby, Herbert B., 96 S. Franklin St.
Gilligan, James P., 359 Scott St.
Groblewski, Casimir C., 20 Elm St., Plymouth.
Grover, Alfred Woodward, 256 Maple St., Kingston.
Gryczka, Frank B., 104 S. Maple St., Kingston.
Guthrie, Malcolm C., 109 S. Franklin St.
Hanlon, Edward F., 160 N. Wyoming St., Hazleton.
Harrington, George W., 544 N. Vine St., Hazleton.
Harrison, William F., 14 W. Carey St., Plains.
Hartman, William L., 806 Susquehanna Ave., West Pittston.
Hauslohner, Austin L., 32 N. Washington St.
Hazlett, Almon C., 8 W. Eighth St., Wyoming.
Helman, William S., 621½ S. Main St., Avoca.
Heyer, Edward G., State Hospital, Nanticoke.
Heyer, Frederick W., State Hospital, Nanticoke.
Higgs, Charles J., 57 Carey Ave.
Hilbert, John A., 6 N. Main St., Pittston.
Hinrichs, August G., 22 N. Main St., Pittston.
Hoffman, George L., 1110 Wyoming Ave., Forty-Fort, Kingston P. O.
Howell, Gideon L., Trucksville.
Howell, John T., 84 N. Main St.
Howorth, John, 64 N. Franklin St.
Hubler, Philip F., 230 Parke St., West Pittston.
Huebner, Dewees A., Fern Glen.
Hughes, Willet E., 59 N. Main St., Ashley.
Hugo, John A., 127 Espy St., Nanticoke.
Jacobosky, Cyrus, 20 N. Franklin St.
James, Uriah A., 18 N. Main St., Pittston.
Jamison, Peter H., Nescopeck.
Judge, Charles A., 1621 Wyoming Ave., Forty-Fort, Kingston P. O.
Kaufman, Albert, 51 N. Washington St.
Keller, Harry M., 215 W. Broad St., Hazleton.
Kerr, Percival M., 204 S. Franklin St.
Kingsbury, Dana W., 137 State St., Nanticoke.
Kirschner, John W., 63 Main St., Luzerne.
Kistler, Oliver F., 43 N. Franklin St.
Kleintob, Freas B., 270 Wyoming Ave., Wyoming.
Kochcznyski, Joseph C., Beishline Bldg., Hazleton.
Kocyan, Joseph J., 60 Hudson Rd., Plains.
Koons, Robert O., Conyngham.
Kosek, Frank J., 447 N. Main St.
Krajewski, Frank J., 61 N. Washington St.
Krych, Felix J., 285 Main St., Kingston.
Kudlich, Manfred H., 29 W. Maple St., Hazleton.
Lake, David H., 137 Maple St., Kingston.
Lance, Ruth Mitchell, 44 Reynolds St., Kingston.
Lathrop, Walter, State Hospital, Hazleton.
Lenahan, Hugh J., 10 Charles St., Pittston.
Long, Charles, 33 S. Washington St.
McClintock, Andrew T., 73 W. Northampton St.
McGuire, William J., 357 E. South St.
McHugh, John J., 124 George Ave., Parsons.
McHugh, Patrick F., 211 Parrish St.
McLaughlin, Patrick A., 71 S. Washington St.
McLaughlin, Thomas V., 68 S. Washington St.
McNelis, Joseph, 55 South Washington St.
Mahon, John B., 32 N. Main St., Pittston.
Marvin, Merton E., 19 Main St., Luzerne.
Matlack, Granville T., 33 W. Northampton St.
Mayock, Peter P., 70 S. Main St.
Mays, Thomas H., Freeland.
Meixell, Edwin W., 25 W. Ross St.
Mengel, Samuel P., 181 S. Franklin St.
Meyers, Elmer L., 239 S. Franklin St.

Miner, Charles H., 115 S. Franklin St.
Molinelli, John H., 106 N. Main St., Pittston.
Monahan, Stanley T., 440 Carey Ave.
Moore, Charles E., Alden Station.
Morgan, Ashton H., 361 E. Market St.
Morgan, David R., Edwardsville.
Mulligan, James A., 15 N. Main St., Plains.
Murray, Michael A., 243 S. Washington St.
Muschlitz, Frederick A., 18 N. Main St., Pittston.
Myers, N. Ray, Wanamie.
Neale, Henry M., Upper Lehigh.
Nealon, James M., 76 Church St., Plymouth.
Netzel, Charles F., E. State St., Plymouth.
Newth, John H., 237 S. Main St., Pittston.
Nicholson, Charles E., Post Office Building, Pittston.
Nurse, Charles T. C., 107 Hickory St.
O'Britis, Constance A., 216 Slocum St., Kingston.
Owens, Harry J., 348 W. Broad St., Hazleton.
Parfitt, Oliver A., 203 Prospect Ave., Nanticoke.
Person, William C., 152 N. Laurel St., Hazleton.
Phillips, Chester H., Miners' Bank Bldg.
Prevost, Clarence W., 222 Wyoming Ave., West Pittston.
Redelin, Albert Augustus, Freeland.
Reiche, Otto C., 328 W. Broad St., Hazleton.
Richards, Emrys, 173½ N. Main St.
Robinhold, Daniel G., 1170 Wyoming Ave., Forty Fort (Kingston P. O.).
Roe, J. Irving, 317 S. River St.
Rogers, Lewis Leonidas, 268 Wyoming Ave., Kingston.
Rogers, Lewis Leonidas, Jr., 73 W. Northampton St.
Ross, Nathaniel, 434 S. Franklin St.
Rubinstein, Harry, 53 N. Main St., Pittston.
Rumbaugh, Marshall Cloyd, 618 Wyoming Ave., Dorranceton (Kingston P. O.).
Rummage, Leland C., Nanticoke.
Rynkiewicz, Stanley H., 241 Wyoming Ave., Kingston.
Schappert, N. Louis, 57 S. Washington St.
Scheifly, John E., 284 Wyoming Ave., Kingston.
Shafer, Charles Layton, 219 College Ave., Kingston.
Sheridan, Lawrence A., 247 N. Main St.
Shuman, George A., 545 Main St., Edwardsville (Kingston P. O.).
Smith, A. Burton, 394 Wyoming Ave., Wyoming.
Smith, H. Alexander, 31 W. Union St.
Smith, Lawrence H., 189 N. Church St., Hazleton.
Smith, W. Clive, 132 S. Franklin St.
Stewart, Walter S., 98 S. Franklin St.
Stiff, William Clifton, 118 E. Main St., Plymouth.
Stoeckel, Louise M., 53 W Union St.
Storz, John C., 551 Charles St., Luzerne.
Straub, Peter, 236 Bowman St.
Taylor, Lewis H., 83 S. Franklin St.
Taylor, Richard P., 34 N. Washington St.
Teitsworth, Ira R., 25 Main St., Luzerne.
Templeton, Harry G., 101 Center Ave., Plymouth.
Thomas, Frank D., 777 Wyoming Ave., Kingston.
Tischler, Max, 66 S. Washington St.
Tobias, John B., 305 E. Northampton St.
Trapold, August, 239 S. Washington St.
Trapold, Augustine C., 239 S. Washington St.
Tressler, Charles W., Shickshinny.
Truckenmiller, Roy, Freeland.
Van Horn, Morris J., Townhill.
Wadhams, Raymond L., 72 N. Franklin St.
Wagner, Earl E., 205 Parrish St.
Wagner, Edward C. O., 125 S. Washington St.
Waters, William W., 101 S. Market St., Nanticoke.
Wenner, Thomas J., 150 S. Washington St.
Wetherby, Della P., 69 W. Union St.
Whitney, Harry LeRoy, 153 W. Main St., Plymouth.
Wilcox, Homer B., 165 S. Maple St., Kingston
Williams, James T., 63 S. Washington St.
Woehrle, Robert S., 403 George Ave., Parsons.
Wolfe, Edward L., Shickshinny.
Wolfe, John B., 203 W. River St.
Wolfe, Samuel M., 218 S. Franklin St.
Wyckoff, Sarah Delia, 68 W. South St.

LYCOMING COUNTY SOCIETY

(Organized 1849.)

(Williamsport is the post office when street address only is given.)

President...John A. Campbell, 838 Funston Ave.
1st V. Pres..J. Louis Mansuy, Ralston.
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J. Frank Gordner, Montgomery.
Lee M. Goodman, Jersey Shore.
J. Elmer Schaefer, Cogan Station.
Raymond J. Bower, 324 Court St.
Program....George T. Ritter, First National Bank Bldg.
John P. Harley, 27 W. Fourth St.
Clarence E. Shaw, 37 W. Fourth St.
Official Publication: The Medical Bulletin.
Issued Monthly.
Editor: Walter S. Brenholtz, 151 E. Third St.

Stated meetings at City Hospital, Williamsport, second Friday of each month at 1:30 p. m. Annual meeting in January.

MEMBERS (113)

Adams, Charles M., 1025 W. Fourth St.
Adams, F. Raymond, Watsontown (Northumberland Co.).
Albright, Joseph W., Muncy.
Allison, Charles E., 2017 W. Fourth St.
Baker, Harold F., Muncy.
Bastian, Charles B., 48 W. Fourth St.
Bay, Percy A., Jersey Shore.
Beach, James D., 223 Market St.
Bennett, Amos W., 1045 E. Third St.
Bingaman, Charles E., Palmerton (Carbon Co.).
Born, Reuben H., Montoursville.
Bower, Raymond J., 324 Court St.
Boyer, Walter E., 861 E. Third St.
Brenholtz, Walter S., 151 E. Third St.
Brown, Barton, Savannah Quarantine Station, Savannah, Ga.
Brown, J. Carlton, 35 W. Fourth St.
Burrows, James H., 531 W. Third St.
Camche, Leon J., Hart Building.
Campbell, John A., 838 Funston Ave., Newberry Sta.
Castlebury, Galen D., 215 E. Third St.
Clinger, Joseph A., Milton (Northumberland Co.).
Corson, Joseph M., Hughesville.
Cummings, Charles J., 755 W. Fourth St.
Davis, George C., Milton (Northumberland Co.).
Decker, P. Harold, 225 N. Seventeenth St., Phila. (Phila. Co.).
Delaney, William E., 854 W. Third St.
Derr, Fuller S., Watsontown (Northumberland Co.).
Derr, Joseph L., Salladasburg.
Donaldson, Harry J., 106 E. Fourth St.
Drick, George R., 27 W. Fourth St.
Etter, Omer R., Warrensville.
Everett, Edward, Masten.
Fleming, J. Frank, Trout Run.

Flock, H. F. W., Williamsport Hospital.
Follmer, William H., 345 Campbell St
Fulmer, Joseph Cleveland, 1116 E. Third St.
Gilmore, Irwin T., Picture Rocks.
Glosser, William E., 440 Market St.
Goodman, Lee M., Jersey Shore.
Gordner, J. Frank, Montgomery.
Hardt, Albert F., 414 Pine St.
Harley, John P., 27 W. Fourth St.
Haskin, Herbert P., 324 High St.
Hayes, Randall B., 1225 Allegheny St., Jersey Shore.
Heller, Charles E., 221 E. Third St.
Hoffa, J. Sidney, Benton (Columbia Co.).
Hoffman, LaRue M., 430 Pine Street.
Hull, Alem P., Montgomery.
Hull, Waldo W., 626 W. Third St.
Hunt, James E., 930 W. Marshall St., Norristown (Montgomery Co.).
Kiess, Daniel E., Hughesville.
King, William L., Muncy.
Klump, George B., 430 Pine St.
Klump, John A., 331 Elmira St.
Knauber, Leo M., 821 Diamond St.
Konkle, W. Bastian, Montoursville.
Kunkle, Wesley F., 519 Seventh Ave.
Lamade, Albert C., 42 E. Fourth St.
Langley, Louis Elsworth, 3 W. Third St.
Lechner, Frederick C., Montoursville.
Lehman, Charles A., 2105 W. Fourth St.
Logue, J. Gibson, Larrivee Bldg.
Logue, William P., 240 Pine St.
Lyon, Edward, 24 W. Fourth St.
McCormick, Horace G., 430 W. 4th St.
Mann, John W., 416 Pine St.
Mansuy, J. Louis, Ralston.
Marsh, William G., Watsontown (Northumberland Co.).
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Milnor, Mahlon T., Warrensville.
Mohn, Charles L., Jersey Shore.
Mosher, James S., 29 W. Third St.
Muffly, George W., Turbotville (Northumberland Co.).
Nevling, Ferdinand S., Clearfield (Clearfield Co.).
Niple, Dio M., Turbotville (Northumberland Co.).
Norris, Franklin J., State Hospital, St. Peter, Minn.
Nutt, John B., 430 Pine St.
Poust, G. Alvin, Hughesville.
Raemore, Millard L., 514 W. Fourth St.
Rank, Lee Russell, Milton (Northumberland Co.).
Rankin, James R., Muncy.
Raper, Thomas W., 602 Pine St.
Reed, James C., Milton.
Reilly, Peter C., 229 Market St.
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Rewalt, Robert K., First Natl. Bank Bldg.
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Ritter, George T., First Natl. Bank Bldg.
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Sanford, Frederick G., 1407 Walnut St., Jersey Shore
Schaefer, J. Elmer, Cogan Station.
Schneider, Charles, 1501 South Ave., South Williamsport.
Schneider, George L., 16 W. Third St.
Senn, Carl H., 433 Market St.
Senn, Walter W., Sagamore.
Shaw, Clarence E., 37 W. Fourth St.
Shuman, Warren N., Jersey Shore.
Spencer, Robert D., State Hospital, Ashland.
Steans, Ralph, Lewisburg (Union Co.).
Strait, Barbara Kuntz, 817 Main St. Penn Yan, N. Y.
Trainer, Robert F., 340 W. Fourth St.
Tule, R. Bruce, Milton (Northumberland Co.).
Turner, Wilbur E., Montgomery.
VanHorn, John W., Montoursville.
Voorhees, Charles D., Hughesville.
Welker, Abraham T., Collomsville.
Wood, T. Kenneth, Muncy.
Wurster, Lloyd E., 416 Pine St.
Yost, B. Meyers, Linden.
Youngman, Charles W., 601 Pine St.

McKEAN COUNTY SOCIETY

(Organized June 18, 1880.)

President...F. Wade Paton, Bradford.
V. Pres.....Allen A. Van Slyke, Mt. Jewett.
Sec.-Treas..Francis De Caria, Bradford.
Censors.....James B. Stewart, Bradford.
Louis D. Joseph, Bradford.
Evan O. Kane, Kane.
Committee on Public Policy and Legislation:
Earle M. McLean, Bradford.
William A. Ostrander, Smethport.

Stated meetings at place selected the first Wednesday of each month. Election of officers in January.

MEMBERS (42)

Ash, Garrett G., Bradford.
Beatty, Smith G., Kane.
Benninghoff, George E., Bradford.
Canfield, Harris A., Bradford.
Chadwick, Burg, Smethport.
Cleveland, Howard Martin, Mt. Jewett.
Cox, Milo W., Kane.
Cummings, George M., Betula.
Dana, Lawrence W., Kane.
DeCaria, Francis, Bradford.
Donnelly, John D., Bradford.
Eaman, Howard K., Mt. Jewett.
Fredericks, William J., Bradford.
Glenn, Thomas O., Bradford.
Haines, Samuel H., Bradford.
Hall, Bret H., Bradford.
Hannum, Oscar S., Bradford.
Heimbach, James M., Kane.
Hickman, Ernest H., Kane.
Hogan, William C., Bradford.
Huff, Samuel R., Eldred.
Johnson, Frederick C., Bradford.
Johnston, James, 3950 W. Sixth St., Los Angeles, Cal.
Joseph, Louis Daniel, Bradford.
Kane, Evan O'Neill, Kane.
Kane, Thomas L., Kane.
Kervin, Joseph A., Bradford.
McCoy, Henry L., Smethport.
McLean, Earle McCormack, Bradford.
Nichols, Henry James, Bradford.
Ostrander, William A., Smethport.
Otto, James V., Port Allegany.
Paton, Fred Wade, Bradford.
Phillips, Edward J., Rixford.
Russell, Reister K., Bradford.
Stewart, James B., Bradford.
Straight-Robbins, Persis, Bradford.
Van Slyke, Allen A., Mt. Jewett.
Vogan, Guy S., Kane.
White, Benjamin Franklin, Jr., Bradford.
Wilson, Homer A., Bradford.
Woodhead, H. Irvin, Bradford.

MERCER COUNTY SOCIETY

(Organized 1848.)

President...Joseph H. Reed, Sharon.
1st V. Pres..John E. Ferringer, Stoneboro.
2d V. Pres...Frederick C. Potter, Mercer.
Sec.-Reporter.Edith MacBride, Sharon.
Treasurer...Carl J. Mehler, Sharon.

Censors.....Beriah E. Mossman, Greenville.
Frank M. Bleakney, Grove City.
M. George Yeager, Mercer.
Committee on Public Policy and Legislation:
Frank M. Bleakney, Grove City.
John E. Ferringer, Stoneboro.
Clarence W. McElhaney, Greenville.

Stated meetings second Thursday in January, March, May, July, September and November at such place as society shall direct. Election of officers in January.

MEMBERS (74)

Armstrong, Henry, Sharon.
Bachop, John C., Sheakleyville.
Bailey, Carl, 233 E. State St., Sharon.
Bailey, Nelson J., Jamestown.
Bakewell, Frank S., Greenville.
Barnes, Matthew A., Pardoe.
Batteiger, Frederick O., Greenville.
Biggins, Patrick E., Sharpsville.
Bleakney, Frank M., Grove City.
Breene, Lawrence N., Farrell.
Brown, David A., Greenville.
Brown, Robert W., Greenville.
Campbell, Watson E., Sharon.
Campbell, Willard B., Grove City.
Campman, Clarence C., West Middlesex.
Cattron, Adison E., Sharpsville.
Cheeseman, John C., Dewey St., Ingram (Alleg. Co.).
Cooley, Judson, Sandy Lake.
Doyle, Joseph A., Greenville.
Elliott, John W., The Dollar Title and Trust Bldg., Sharon.
Ferringer, John E., Stoneboro.
Fisher, Philip P., Sharon.
Frye, Benjamin A., Sharpsville.
Gilliland, Caroline J., Vine St., Sharon.
Hagin, Edward N., 233 E. State St., Sharon.
Hamborszky, Eugene J., Farrell.
Hanna, David B., Stoneboro.
Heilman, Ralph S., Sharon.
Heilman, Salem, Sharon.
Hoffman, James D., Grove City.
Hogue, Thomas F., Fredonia.
Hope, Paul T., Mercer.
Hope, Robert M., Mercer.
Hunter, John A., West Middlesex.
Hyde, Allan P., 233 E. State St., Sharon.
Jones, Orlando A., Sharon.
Kahle, Gail W., Hadley.
Kelly, Ross A., Farrell.
Kennedy, George W., The Dollar Title and Trust Bldg., Sharon.
Kusmin, Harry, 2326 Eldridge St., Pittsburgh (Allegheny Co.).
MacBride, Martha Edith, 203 The Dollar Title and Trust Bldg., Sharon.
McClelland, James H., Grove City.
McConnell, Edwin M., Grove City.
McElhaney, Clarence W., Greenville.
McElree, Frank E., Greenville.
Marshall, Clifford C., 233 E. State St., Sharon.
Martin, John H., Greenville.
Martin, John M., Grove City.
Massey, Harvey E., The Dollar Title and Trust Bldg., Sharon.
Mehler, Carl J., The Dollar Title and Trust Building, Sharon.
Mehler, Robert E., Farrell.
Millikin, Harry W., The Dollar Title and Trust Bldg., Sharon.
Mitchell, Andrew J., The Dollar Title and Trust Bldg., Sharon.
Montgomery, Beriah A., Grove City.
Moses, Charles H., The Dollar Title and Trust Bldg., Sharon.
Mossman, Beriah E., Greenville.
Nicholls, Robert D., Farrell.
O'Brien, August M., State St., Sharon.
Phillips, William H., Greenville.
Phythyon, Dan, The Dollar Title and Trust Building, Sharon.
Potter, Frederick C., Mercer.
Reed, Joseph H., Sharon.
Rickenbrode, Charles O., Farrell.
Simpson, Spencer P., Sharon.
Spearman, John Francis, 205 The Dollar Title and Trust Bldg., Sharon.
Tidd, Ralph M., Clark.
Tinker, Burgoyne L., West Middlesex.
Twitmyer, John H., Sharpsville.
Walker, Charles L., Sharon.
White, Harry, The Dollar Title and Trust Building, Sharon.
Whyte, Harry A., 206 Idaho St., Farrell.
Writt, William M., Farrell.
Wyant, William W., Farrell.
Yeager, M. George, Mercer.

MIFFLIN COUNTY SOCIETY

(Organized March 4, 1847.)

President...William H. Kohler, Milroy.
1st V. Pres..Charles M. Johnson, McVeytown.
2d V. Pres...Hugh S. Alexander, Belleville.
Sec.-Treas...James A. C. Clarkson, Lewistown.
Reporter....Frederick A. Rupp, Lewistown.
Librarian....James A. C. Clarkson, Lewistown.
Censors.....Walter S. Wilson, Lewistown.
Robert T. Barnett, Lewistown.
Frederick A. Rupp, Lewistown.
Committee on Public Health Legislation:
Frederick A. Rupp, Lewistown.
John P. Getter, Belleville.
James W. Mitchell, Lewistown.
Oscar M. Weaver, Lewistown.
Bruce P. Steele, McVeytown.
Raymond M. Krepps, Lewistown.
Committee on Program:
Frederick A. Rupp, Lewistown.
Robert T. Barnett, Lewistown.
Charles M. Johnson, McVeytown.

Stated meetings in Lewistown or elsewhere as may be selected, on the first Thursday of each month. Election of officers in December.

MEMBERS (25)

Alexander, Hugh S., Belleville.
Allis, Paul M., Lewistown.
Allison, Elizabeth, 600 Lexington Ave., New York, N. Y.
Barnett, Robert T., Lewistown.
Boyer, Samuel J., Milroy.
Brisbin, Charles H., Lewistown.
Clarkson, James A. C., Lewistown.
Getter, John P., Belleville.
Hazlett, Silas M., Allensville.
Johnson, Charles M., McVeytown.
Kohler, Benjamin R., Reedsville.
Kohler, William H., Milroy.
Krepps, Raymond M., Lewistown.
McKim, Vincent L., Lewistown.
Miller, Henry E., McAlevys Fort (Huntingdon Co.).
Mitchell, James W., Lewistown.
Rothrock, Samuel H., Reedsville.
Rupp, Frederick A., Lewistown.
Smith, Thomas H., Burnham.
Stambaugh, Charles L., Reedsville.
Steele, Bruce P., McVeytown.
Sweigart, Henry W., Lewistown.
Swigart, Samuel W., Lewistown.
Weaver, Oscar M., Lewistown.
Wilson, Walter S., Lewistown.

MONROE COUNTY SOCIETY

(Organized Nov. 24, 1902.)

President...Charles S. Logan, Stroudsburg.
V. Pres.....J. Anson Singer, East Stroudsburg.
Secretary...William R. Levering, Stroudsburg.
Treasurer...Eugene H. Levering, Stroudsburg.
Censors.....Walter L. Angle, East Stroudsburg.
Charles S. Flagler, Stroudsburg.

Meetings held four times a year at call of president.

MEMBERS (15)

Andrew, William E., Stroudsgurg.
Angle, Walter L., 229 S. Courtlandt St., East Stroudsburg.
Flagler, Charles S., Stroudsburg.
Gerhart, Robert R., Linden Hall (Center Co.).
Howerter, William F., Sciota.
Le Cates, Charles A., Mt. Pocono.
Levering, William R., 31 N. Seventh St., Stroudsburg.
Levering, Eugene H., 805 Main St., Stroudsburg.
Logan, Charles Shaw, 401 Main St., Stroudsburg.
Rosenkranz, Carl B., 55 Crystal St., East Stroudsburg.
Singer, J. Anson, 116 Washington St., East Stroudsburg.
Smith, Louis B., Bushkill (Pike County).
Stearns, John H., Delaware Water Gap.
Travis, George S., East Stroudsburg.
Wertman, Alvin A., Tannersville.

MONTGOMERY COUNTY SOCIETY

(Organized January, 1847.)

President...George W. Miller, Norristown.
1st V. Pres..John B. Sherbon, Pottstown.
2d V. Pres...Willis Read Boberts, Norristown.
Rec. &
Fin. Sec...Edgar S. Buyers, Norristown.
Cor. Sec.
& Rept....John C. Simpson, Norristown.
Treasurer...William G. Miller, Norristown.
Censors.....Percy H. Corson, Plymouth.
William G. Miller, Norristown.
George F. Hartman, Port Kennedy.
Trustees....George F. Hartman, Port Kennedy.
Edgar S. Buyers, Norristown.
J. Newton Hunsberger, Norristown.
Herbert A. Bostock, Norristown.
William G. Miller, Norristown.
Committee on Public Policy and Legislation:
Herbert A. Bostock, Norristown.
William G. Miller, Norristown.
Oliver C. Heffner, Pottstown.
Official Publication: Montgomery County Medical Bulletin.
Issued Monthly.
Editor: Frank C. Parker, Norristown.

Stated meetings in Montgomery Hospital, Norristown, at 2:30 p. m., on the first and third Wednesdays of every month excepting July and August. Election of officers in January.

MEMBERS (157)

Allebach, Newton G., Souderton.
Allen, Frederick B., North Wales.
Allen, H. Croskey, Norristown.
Anders, Warren Z., Collegeville.
Arnold, Clifford H., Ardmore.
Arnold, Herbert A., Ardmore.
Atkinson, Paul G., Norristown.
Bacon, Edythe A., State Hospital, Norristown.
Beideman, Joseph E., Norristown.
Benner, Ervin F., Salfordville.
Bigoney, Carl F., Lansdale.
Bigoney, Franklin G., Lansdale.
Bostock, Herbert A., Norristown.
Branson, Thomas F., Rosemont.
Brown, Joel D., 14 Powell Ave., Millbourne (Phila. Co.).
Brush, Franklin C., 204 S. Gay St., Phoenixville (Chester Co.).
Bushong, Frederick, Pottstown.
Buyers, Edgar S., Norristown.
Carpenter, Chapin, Wayne (Delaware Co.).
Chrystie, Walter, Bryn Mawr.
Cloud, Joseph Howard, Box 484, Ardmore.
Cope, Roscoe J., Hatfield.
Cordonna, George, Norristown.
Corson, Edward Foulk, 325 Cynwyd Rd., Cynwyd.
Corson, Percy H., Plymouth Meeting.
Council, Malcolm S., Bryn Mawr.
Craig, A. J., Fort Washington.
Cross, Sumner H., Jenkintown.
Crowe, James, Huntingdon Valley.
Dewees, A. Lovett, Haverford.
Dill, Wallace W., Norristown.
Donaldson, Albert Barnes, Bala.
Doran, Charles F., Phoenixville (Chester Co.).
Drake, Howard H., Norristown.
Eisenberg, J. Lawrence D., Norristown.
Ellenberger, Joseph M., Norristown.
Elmer, Robert P., Wayne (Delaware Co.).
Evans, Alexander Rae, Ardmore.
Fabbri, Remo, 354 E. Main St., Norristown.
Faries, Clarence T., Narberth.
Fordyce, DeLorme T., Conshohocken.
Gamble, Robert G., Haverford.
Garner, Albert R., Norristown.
Gery, Alfred O., East Greenville.
Godfrey, Andrew, Ambler.
Gotwals, John Elmer, Phoenixville (Chester Co.).
Graber, Henry, Royersford.
Hanley, Paul D., Pottstown.
Harris, Richard H., Elkins Park.
Hartman, George F., 614 Swede St., Norristown.
Harvey, John, Bryn Mawr.
Hassell, Howard W., Bridgeport.
Heffner, Oliver C., Pottstown.
Heffner, Robert S., Pottstown.
Herman, Ambrose C., Lansdale.
Highley, George N., Conshohocken.
Hough, Mary P. H., Ambler.
Hubley, Benjamin F., Norristown.
Hunsberger, J. Newton, Norristown.
Hunsberger, William H., Pennsburg.
Hurwitz, Isadore, Norristown.
Irwin, George R., Bridgeport.
Jago, Arthur H., Ardmore.
Janjigian, Jesse P., City Hospital, Wilkes-Barre (Luzerne Co.).
Janjigian, Robert R., City Hospital, Wilkes-Barre (Luzerne Co.).
Keaton, James M., Ardmore.
Keeler, Russell R., Harleysville.
Keeler, Vincent Z., Harleysville.
Kell, Elmer A., 608 W. Lincoln Highway, Rawlins, Wyo.
Kerling, George A., Pennsburg.
Kershner, Ammon G., Norristown.
Klotz, J. A., E. Greenville.
Knipe, Reinoehl, Norristown.
Knipe, William H., Limerick.
Kriebel, Elmer G., Norristown.
Krusen, Edward A., Norristown.
Krusen, Francis T., Norristown.
Lakin, H. Pearce, Lansdale.
Landis, James C., Pennsburg.
Little, Frederick B., Norristown.
Logan, John A., Hatboro.
Luders, Charles Williamson, Cynwyd.
Lukens, George T., Conshohocken.
Lukens, Philip J., Ambler.

McCracken, James A., Norristown.
McGinnis, George E., Norristown.
McKenzie, William, Conshohocken.
McLaughlin, Perry W., Norristown.
MacDonald, John T., Norristown.
MacLeod, George I., Ardmore.
Markley, John Morris, Graterford.
Mauger, Lee F., Pottstown.
Messmer, Anthony C., Ardmore.
Miller, George W., Norristown.
Miller, Joseph S., Collegeville.
Miller, S. Metz, State Hospital, Norristown.
Miller, William G., Norristown.
Moore, Ronald C., Schwenksville.
Moyer, David B., Hatfield.
Nathan, David, Norristown.
Neiffer, Milton K., Wyncote.
Nicholson, Percival, Ardmore.
O'Neal, Alexander H., St. Davids (Delaware Co.).
Parker, Frank C., Norristown.
Parkinson, William, 1729 Edgewood St., Phila. (Phila. Co.).
Perkins, John D., Jr., Conshohocken.
Podall, Harry C., 622 Swede St., Norristown.
Porter, J. Elmer, Pottstown.
Quinn, Elwood T., Jenkintown.
Rahn, Norman H., Souderton.
Ramsey, Frank M., Chestnut Hill.
Randall, Robert W., Royersford.
Read, Alfred H., Norristown.
Reed, Henry D., Pottstown.
Roberts, Isaac B., Llanerch (Delaware Co.).
Roberts, Willis Read, Norristown.
Rose, Clarence Atwood, Ardmore.
Roth, John A., Red Hill.
Roth, J. Le Roy, Conshohocken.
Rouse, John, Fox Chase (Phila. Co.).
Ruth, Aaron L. Conshohocken.
Scholl, Harvey F., Green Lane.
Scholl, Henry Nathaniel, Kulpsville.
Seiple, J. Howard, Center Square.
Shaner, Warren B., Pottstown.
Sharpe, John S., Haverford.
Sharpless, Frederick C., Rosemont.
Shearer, Herbert B., Worcester.
Sheehan, William Coronata, Bethlehem Pike, Chestnut Hill, (Phila.).
Shelley, Isaac H., Norristown.
Shelley, James A., Ambler.
Shelly, Daniel W., Ambler.
Sherbon, John B., Pottstown.
Simpson, John C., 524 Swede St., Norristown.
Stapp, H. Forsythe, Pottstown.
Steden, Daniel E. L., Narberth.
Stein, George W., Norristown.
Stein, Walter Jacob, Ardmore.
Sturgis, Margaret C., Ardmore.
Sturgis, Samuel B., Ardmore.
Taylor, Herbert W., Haverford.
Taylor, Marianna, St. Davids (Delaware Co.).
Thomas, J. Quincy, Conshohocken.
Tunnell, Monroe H., 23 Prospect Ave., Bryn Mawr.
Twinning, Howard E., Glenside.
Tyler, Benjamin A., Royersford.
Van Buskirk, Frederick W., Pottstown.
Vedder, Wentworth D., Pottstown.
Watson, W. Stuart, Norristown.
Watson, William John, Cheltenham.
Wiley, S. Nelson, Blythewood, Greenwich, Conn.
Wills, T. Edmund, Pottstown.
Wilson, John G., State Hospital, Norristown.
Wolfe, R. Vincent, Norristown.
Wright, Winfred J., Skippack.
Wylie, Charles R., 558 High St., Pottstown.
Yeakle, Walter A., Norristown.

MONTOUR COUNTY SOCIETY

(Organized June 15, 1874.)

President...Horace V. Pike, State Hospital, Danville.
1st V. Pres..J. Allen Jackson, State Hospital, Danville.
2d V. Pres...Enoch H. Adams, Geisinger Hospital, Danville.
Sec.-Rept...John H. Sandel, Danville.
Treasurer...George B. M. Free, State Hospital, Danville.
Censors.....Robert S. Patten, Danville (1 year).
Harold L. Foss, Geisinger Hospital, Danville (2 years).
Ernest T. Williams, Danville (3 years).
Committee on Public Policy and Legislation:
George B. M. Free, State Hospital, Danville.
Ernest T. Williams, Danville.
Enoch A. Adams, Geisinger Hospital, Danville.
Exec. Com..Horace V. Pike, Pres., State Hospital Danville.
John H. Sandel, Sec., Danville.
Carl E. Ervin, Geisinger Hospital, Danville.
Committee on Cancer:
Harold L. Foss, Geisinger Hospital, Danville.
Robert S. Patten, Danville.
Philip C. Newbaker, Danville.
Official Publication: "The Bulletin."
Editor: John H. Sandel, Danville.
Asso. Editor: Robert A. Keilty, Geisinger Hospital, Danville.
Issued Monthly, except August.

MEMBERS (23)

Adams, Enoch H., Geisinger Hospital, Danville.
Ashenhurst, Ida M., State Hospital, Danville.
Bitler, Benjamin E., Potts Grove (Northum. Co.).
Chamberlain, Leslie R., State Hospital, Danville.
Ervin, Carl E., Geisinger Hospital, Danville.
Foss, Harold L., Geisinger Hospital, Danville.
Free, George B. M., State Hospital, Danville.
Glenn, Frank D., State Hospital, Danville.
Jackson, J. Allen, State Hospital, Danville.
Keilty, Robert A., Geisinger Hospital, Danville.
Mayberry, Charles B., Retreat (Luzerne Co.).
Meredith, Hugh B., 3305 Arch St., Philadelphia (Philadelphia Co.).
Nebinger, Reid, Geisinger Hospital, Danville.
Newbaker, Philip C., Danville.
Patten, Robert Swift, Danville.
Pike, Horace V., State Hospital, Danville.
Robbins, James E., State Hospital, Wernersville.
Sandel, John H., Danville.
Shearer, Joseph P., Florence Infirmary, Florence, S. C.
Shellenberger, Edward B., State Hospital, Danville.
Shultz, Cameron, Danville.
Snyder, John Howard, Sunbury (Northumberland Co.).
Williams, Ernest T., Danville.

NORTHAMPTON COUNTY SOCIETY

(Organized July 10, 1849.)

President...Delbert K. Santee, Bethlehem.
1st V. Pres..Paul R. Correll, Easton.
2d V. Pres...Henry C. Pohl, Nazareth.
Rec. Sec. & Treas...Victor S. Messinger, Easton.
Cor. Sec.....W. Gilbert Tillman, Easton.
Reporter....William A. Finady, S. Bethlehem.
Censors.....John C. Keller, Wind Gap.
William P. Walker, Bethlehem.
Clayton E. Royce, Bethlehem.

Exec. Com. . Delbert K. Santee, Bethlehem.
Paul E. Correll, Easton.
Victor S. Messinger, Easton.

Committee on Public Policy and Legislation:
William L. Estes, Sr., Bethlehem.
Walter D. Chase, Bethlehem.
W. Gilbert Tillman, Easton.

Meetings shall be held at 11 a. m., on the third Friday of every month except July and August at such places as the society may determine by vote. Outing meeting in August.

MEMBERS (134)

Anderson, George R., Easton.
Beck, Charles E., Portland.
Beck, Richard H., Hecktown.
Beck, Senn G., Nazareth.
Beidelman, Edgar R., 314 W. Market St., Bethlehem
Betts, James A., 100 N. Seventh St., Easton.
Blank, Oscar F., 545 N. New St., Bethlehem.
Bloss, Raymond H., Pocono Pines (Monroe Co.).
Burkhart, Herman A , 552 Main St., Bethlehem.
Bush, Elmer E., Danielsville.
Butler, Thomas James, 8 E. Fourth St., S. Bethlehem.
Carty, Harry B., Freemansburg.
Cathrall, Walter J., 116 E. Fourth St., S. Bethlehem.
Chambers, Francis S., 520 Seventh St., S. W., Rochester, Minn.
Chase, Walter D., 230 E. Broad St., Bethlehem.
Collmar, Charles, Easton.
Conahan, Francis J., Bethlehem.
Condron, James J., 362 Berwick St., Easton.
Cope, William F., Easton.
Correll, Paul R., Easton.
Dech, Elmer J., 5 N. Fourteenth St., Easton.
Dech, Schuyler H., 118 S. Third St., Easton.
Deibert, Edward J,. Hellertown.
Dever, Francis J., Third and Cherokee Sts., Bethlehem.
Dietrick, Thomas, 60½ Center Square, Easton.
Dilliard, Benjamin F., East Bangor.
Edwards, H. Threlkeld, South Bethlehem.
Erwin, Francis H., Freemansburg.
Estes, William L., 805 Delaware Ave., South Bethlehem.
Estes, William L., Jr., South Bethlehem.
Evans, E. William, Easton.
Farber, William Daniel, 16-18 W. Twenty-first St., Northampton.
Fetherolf, James Allen, Stockertown.
Field, Benjamin Rush, Easton.
Field, George B. Wood, Easton.
Finady, William Aaron, 29 E. Fourth St., South Bethlehem.
Fisher, Ralph A., 1306 Washington St., Easton.
Fisler, Harry Cattell, Easton.
Fox, Arthur S., 1418 Washington St., Easton.
Fraunfelder, Jacob A., Nazareth.
Freed, Isadore E., 861 E. Fourth St., South Bethlehem.
Fretz, John E., Easton.
Gabor, Adolph S., 901 E. Fourth St., South Bethlehem.
Glick, William H., 812 E. Fourth St., South Bethlehem.
Green, Edgar M., Easton.
Guth, Henry E., Orefield (Lehigh Co.).
Hahn, Frank J., Bath.
Hamilton, Arthur B., 30 W. Church St., Bethlehem.
Hance, Burtis M., 19 S. Third St., Easton.
Harman, Clair G., 62 N. Third St., Easton.
Heller, Austin D., 70 E. Broad St., Bethlehem.
Heller, Henry D., Hellertown.
Hoffman, Edward L., 1148 Northampton St., Easton.
Hummel, Clarence D., 2329 Hay St., Easton.
Hunt, Joseph S., Easton.
James, James Edward, 253 E. Broad St., Bethlehem.
Jones, Byron C., 644 Broadway, South Bethlehem
Keller, David H. Bangor.
Keller, John C., Wind Gap.
Kern, Thomas B., 740 Main St., Bethlehem
Kessler, Frank J., 118 S. Sixth St., Easton.
Kleinhans, Paul Howard, 65 W. Broad St., Bethlehem.
Klock, Glenn G., Easton.
Koch, Victor J., Nazareth.
Kotz, Adam L., Easton.
Krebs, Stanley A., 1817 Ferry St., Easton.
Kressler, Kenneth W., 939 Washington St., Easton.
Leibert, Harry F., 532 E. Fourth St., South Bethlehem.
Leigh, Herbert Crozier, 120 N. Third St., Easton.
Lentz, John A., Northampton.
Longacre, Jacob E., Weaversville.
Love, J. King, Easton.
Ludlow, David Hunt, Easton.
McCormick, Cardinal Claude, Pen Argyl.
McCormick, Henry Edward, 61 N. Third St., Easton.
Maysels, Alexander J., 1221 E. Fourth St., S. Bethlehem.
Meixsell, Charles E., Northampton.
Messinger, Victor S., Easton.
Michler, Henry D., Easton.
Miesse, Kate DeWitt, Easton.
Miller, Elmer C., East Bangor.
Morganstern, James A., 137 S. Third St., Easton.
Petrulias, George A., 107 W. Fourth St., South Bethlehem.
Phillips, Milton W., Chapman Quarries.
Pohl, Henry C., Nazareth.
Powick, Thomas H., 1351 Washington St., Easton.
Quiney, James J., 309 Bushkill St., Easton.
Raub, Reuben, Easton.
Rauch, Stewart E., 304 Spring St., Bethlehem
Reagan, Arthur D., Easton.
Reaser, Budd J., Martin's Creek.
Reichard, Noah W., Bangor.
Rentzheimer, William H., Hellertown.
Richards, Ellerslie Wallace, South Easton.
Richards, Oscar M., South Easton.
Roberts, Frederick C., Easton.
Rohrbach, Harvey O., 540 N. New St., Bethlehem.
Rosenberry, Edward S., Stone Church.
Royce, Clayton E., St. Luke's Hosp., South Bethlehem.
Ruch, Asher George, 413 W. Broad St., Bethlehem.
Santee, Delbert Kansas, South Bethlehem.
Schlier, Earl B., 534 Ave. D, Bethlehem.
Schmoyer, Herbert John, 203 E. Broad St., Bethlehem.
Schnabel, Edwin D., Bethlehem.
deSchweinitz, George L., 85 E. Broad St., Bethlehem.
Sheridan, Rose B , 422 Wyandotte St., S. Bethlehem.
Sherrer, Frederick A., Easton.
Shoudy, Loyal A., Bethlehem.
Smock, Edwin L., Bath, R. D. 2.
Smythe, William A., 422 W. Broad St., Bethlehem.
Stem, Preston E., 435 Wyandotte St., South Bethlehem.
Sterner, Paul F., 102 W. Fourth St., S. Bethlehem.
Stofflet, Clinton F., Pen Argyl.
Stotz. Joseph A., 306 Cattell St., Easton.
Struthers, Clayton P., 1823 Ferry St., Easton.
Swan, Tyrus E., Easton.
Thomason, William P. O., Easton.
Tillman, W. Gilbert, 1803 Washington St., Easton.
Uhler, Floyd W., Pen Argyle.
Uhler, Stewart Mann, Pen Argyl.
Uhler, Sydenham P., Easton.
Uhler, Tobias M., 54 S. Whitfield St., Nazareth.
Updegrove, Harvey C., Easton.
Updegrove, Jacob D., Easton.
Walker, William P., South Bethlehem.
Walter, Mitchell, 102 W. Fourth St., South Bethlehem.
Walter, Paul H., 60 E. Broad St., Bethlehem.
Walter, Robley D., 903 Ferry St., Easton.
Ward, Frederick E., 1119 Ferry St., Easton.
Weaver, Henry F., Easton.
Welden, Carl F., 546 N. New St., Bethlehem.
West, John H., Easton.
Yost, Robert J., Fourth and Vine Sts., West Bethlehem.
Zulick, Thomas C., Easton.

NORTHUMBERLAND COUNTY SOCIETY

(Reorganized Nov. 27, 1903.)

President...E. Roger Samuel, 6 N. Oak St., Mt. Carmel.
1st V. Pres..Lloyd M. Holt, 146 E. Sunbury St., Shamokin.
2d V. Pres...John W. McDonnell, 608 Market St., Sunbury.
Secretary...Charles H. Swenk, 235 Market St., Sunbury.
Asst. Sec. & Treas....Robert B. McKay, 34 S. Second St., Sunbury.
Censors.....Lester E. Schoch, 217 E. Sunbury St., Shamokin.
Harry T. Simmonds, 48 N. Market St., Shamokin.
Charles W. Rice, 63 Queen St., Northumberland.

Committee on Public Policy and Legislation:
George W. Reese, State Hospital, Shamokin.
Francis E. Drumheller, 134 Chestnut St., Sunbury.
Clay Weimer, 200 E. Dewart St., Shamokin.

Committee on Public Health:
John B. Cressinger, 243 Market Sq., Sunbury.
Alfred H. Smink, 2 S. Market St., Shamokin.
Lorenzo Zimmerman, 23 N. Oak St., Mt. Carmel.

Prog. Com..George W. Reese, State Hospital, Shamokin.
Horatio W. Gass, 910 Market St., Sunbury.
William T. Graham, 244 Market Square, Sunbury.

Official Publication: The Northumberland County Medical Society Notes.
Issued Monthly.
Editor: Charles H. Swenk, 235 Market St., Sunbury.

Stated meetings at 3:30 p. m., in Sunbury, the first Wednesday of January, March, May, September and November; and in Shamokin, at 1 p. m., the first Wednesday of February, April, June, October and December. Annual meeting in January.

MEMBERS (60)

Bealor, Benjamin A., 505 N. Sixth St., Shamokin.
Becker, Harvey M., 49 S. Fourth St., Sunbury.
Blosser, Julius A., Dalmatia.
Buczko, Andrew B., State Hospital, Shamokin.
Burg, Stoddard Somers, U. S Marine Hospital No. 21, Stapleton, N. Y.
Conway, Mark A., Locust Gap.
Cooner, Charles C., Kulpmont.
Cressinger, John Brice, 243 Market Sq., Sunbury.
Deitrick, George A., 30 N. Third St., Sunbury.
Dietz, Charles K., 223 W. Spruce St., Shamokin.
Donahue, John J., 32 S. Market St., Shamokin.
Drumheller, Francis E., 134 Chestnut St., Sunbury.
Eister, W. Howard, 1029 Line St., Sunbury.
Enterline, John H., 604 E. Sunbury St., Shamokin.
Fagley, Raymond C., U. S. Pub. Health Hospital, 5800 Arsenal, St. Louis, Mo.
Flanagan, Michael J., 307 N. Shamokin St., Shamokin.
Gass, Horatio W., 910 Market St., Sunbury.
Geise, Samuel B., 239 Chestnut St., Sunbury.
Graham, William T., 244 Market Sq., Sunbury.
Griswold, Albert T., Treverton.
Heilman, D. Franklin, Northumberland.
Hollenback, David S., 56 E. Independence St., Shamokin.
Holt, Lloyd M., 146 E. Sunbury St., Shamokin.
Jones, Adna S., 415 Spurzheim St., Shamokin.
Kalloway, Sidney, c/o Bertha Coal Co., Burgettstown (Wash. Co.).
Karterman, William D., Hepler (Schuylkill Co.).
Knights, Agnes Sholly, Selins Grove (Snyder Co.).
Lyons, Fowler, Turbotville.
McCay, Robert B., 34 S. Second St., Sunbury.
McDonnell, John W., 16 N. Fourth St., Sunbury.
McWilliams, Kimber C., 219 E. Dewart St., Shamokin.
MacDonald, Ernest R., Keiser.
Malick, Clarence Hiram, Herndon.
Maurer, James M., 319 E. Sunbury St., Shamokin.
Mohn, James O., Shamokin, R. D. 1.
Nickel, J. Edward, 202 Fairmont Ave., Sunbury.
Peril, Hyman H., 408 W. Spruce St., Shamokin.
Raker, Frederick D., 42 E. Independence St., Shamokin.
Ranck, Lee Russell, Milton.
Ratajski, Joseph E., 510 Pittston Ave., Scranton (Lackawanna Co.).
Reese, George W., State Hospital, Shamokin.
Rice, Charles W., 63 Queen St., Northumberland.
Rice, Fred, 256 Arch St., Sunbury.
Salters, Oscar E., 41 S. Market St., Shamokin.
Samuel, E. Roger, Third and Hickory Sts., Mt. Carmel.
Schoch, Lester Edgar, 217 E. Sunbury St., Shamokin.
Schoffstall, Joseph W., 248 Market St., Sunbury.
Simmonds, Henry Thomas, 48 N. Market St., Shamokin.
Simmons, Richard H., 116 S. Sixth St., Shamokin.
Smigelsky, Isadore E., 20 E. 5th St., Mt. Carmel.
Smink, Alfred H., 2 S. Market St., Shamokin.
Steck, Fred P., Malick Bldg., Shamokin.
Strickland, James G., 25 S. Shamokin St., Shamokin.
Swenk, Charles H., 235 Market St., Sunbury.
Thomas, Charles Meade, Masonic Temple, Sunbury.
Tiffany, Thomas J., Pillow (Dauphin Co.).
Vastine, John H., 78 E. Sunbury St., Shamokin.
Weimer, Clay H., 200 E. Dewart St., Shamokin.
Wentzel, William S., 414 Market St., Sunbury.
Zimmerman, Lorenzo B., 23 N. Oak St., Mt. Carmel

PERRY COUNTY SOCIETY

(Organized Nov. 19, 1849.)

President...William G. Morris, Liverpool.
1st V. Pres..George S. Kinzer, Ickesburg.
2d V. Pres...Montgomery Gearhart, Millerstown.
Secretary...Maurice I. Stein, New Bloomfield.
Treasurer...Charles E. Delancy, Newport.
Censors.....Edward E. Moore, New Bloomfield.
A. Russell Johnston, New Bloomfield.
Lenus A. Carl, Newport.

Annual meeting at New Bloomfield second week in January. Quarterly meetings at places and times selected.

MEMBERS (15)

Beale, Benjamin F., Duncannon.
Bogar, George H. M., Liverpool.
Carl, Lenus A., Newport.
Delancy, Charles E., Newport.
Gearhart, Montgomery, Millerstown.
Johnston, A. Russell, New Bloomfield.
Moore, Edward E., New Bloomfield.
Morris, William G., Liverpool.
Morrow, William T., Loysville.
Orris, Henry O., Newport.
Patterson, Frank, Med. Exmr. P. R. R., Huntingdon (Huntingdon Co.).
Sheibly, John A., Shermans Dale.
Stein, Maurice Isaac, New Bloomfield.
VanDyke, Arthur D., c/o Pennsylvania Railroad, Williamsport, (Lycoming Co.).
Woods, Harvey M., Blain.

PHILADELPHIA COUNTY SOCIETY

(Instituted 1849. Incorporated September 27, 1877.)

(Philadelphia is the post office when street address only is given.)

President...J. Norman Henry, 1906 Spruce St.
1st V. Pres..Penn Gaskill Skillern, Jr., 1633 Locust St.
Associate Vice-Presidents:
North Branch—None.
South Branch—Frederick S. Baldi, 2117 Porter St.
Kensington Branch—Harry W. Goos, Ambler and Dauphin Sts.
West Branch—Collin Foulkrod, 3910 Chestnut St.
Northeast Branch—William L. C. Spaeth, 5000 Jackson St.
Northwest Branch—Maurice J. Karpeles, 146 W. Chelten Ave., Gtn.
Southeast Branch—Samuel A. Loewenberg, 1905 Spruce St.
Secretary...William S. Wray, 2007 Chestnut St.
Assistant Secretary and Clerk of Directors:
Chas. Scott Miller, 1218 West Wyoming Avenue.
Treasurer...Edward A. Shumway, 2046 Chestnut St.
Censors.....William E. Hughes, 3945 Chestnut St. (5 years).
Levi J. Hammond, 1222 Spruce St. (4 years).
L. Webster Fox, S. E. Cor. Seventeenth and Spruce Sts. (3 years).
John Welsh Croskey, 1909 Chestnut St. (2 years).
Henry D. Jump, 2019 Walnut St. (1 year).
Directors:
Moses Behrend, 1738 Pine St. (1925).
Paul J. Pontius, 1831 Chestnut St. (1925).
John F. Roderer, 2426 N. Sixth St. (1925).
William E. Parke, 1622 Spruce St. (1924).
George A. Knowles, 4812 Baltimore Ave. (1924).
F. Hurst Maier, 2019 Walnut St. (1924).
Paul B. Cassidy, 2037 Pine St. (1923).
Arthur C. Morgan, 2028 Chestnut St. (1923).
Frederick S. Baldi, 2117 Porter St.

COMMITTEES-AT-LARGE

Public Policy and Legislation:
George C. Yeager, Chairman, 1419 E. Susquehanna Ave.
Maurice J. Karpeles.
R. Powers Wilkinson.
Arthur P. Keegan.
Henry B. Kobler.
Increase of Membership:
George Wilson, Chairman, 5000 Walnut St.
Marion Hague Rea.
A. Graeme Mitchell.
Robert N. Downs, Jr.
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Seneca Egbert, Chairman, 4814 Springfield Ave.
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Christian B. Longenecker.
C. Howard Moore.
Robert G. Torrey.
William N. Bradley.
Tuberculosis:
Henry R. M. Landis, Chairman, 1818 S. Rittenhouse Square.
Frank A. Craig.
Elmer H. Funk.
Edward J. G. Beardsley.
Thomas Klein.
Co-operative Allied Agencies and Institutions:
Wm. Duffield Robinson, Chairman, 2012 Mt. Vernon St.
George P. Pilling, Jr.
Irving W. Hollingshead.
Home of the Society:
John W. West, Chairman, 1125 Wallace St.
Levi J. Hammond.
Barton C. Hirst.
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Isador P. Strittmatter.
Library:
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Samuel A. Loewenberg.
John W. Croskey.
John J. Lynch.
Harry B. Wilmer.
Nervous and Mental Diseases:
Theodore H. Weisenburg, Chairman, 1909 Chestnut St.
Earl D. Bond.
Charles W. Burr.
Francis X. Dercum.
Charles K. Mills.
Daniel J. McCarthy.
Edward A. Strecker.
Foods, Drugs and Beverages:
Russell S. Boles, Chairman, 53rd St. and Overbrook Ave.
Joseph McIver.
Edward H. Goodman.
Philip F. Williams.
Medical Education:
David Riesman, Chairman, 1715 Spruce St.
Thomas McCrae.
John H. Gibbon.
William Pepper.
Ross V. Patterson.
Narcotics:
Joseph C. Doane, Chairman, Philadelphia General Hospital.
Henry K. Mohler.
John H. W. Rhein.
Thomas C. Kelly.
John H. Remig.
Prevention of Cancer:
John C. Clark, Chairman, 2017 Walnut St.
George G. Ross.
Floyd E. Keene.
Catharine Macfarlane.
Robert G. Le Conte.
Industrial Medicine:
Mervyn Ross Taylor, Chairman, 1823 Spring Garden St.
William S. Higbee.
Charles N. Sturtevant.
Drury Hinton.
Edwin H. McIlvain.
Public Relations:
Ross V. Patterson, Chairman, 2126 Spruce St.
George E. de Schweinitz.
Henry D. Jump.
Herman B. Allyn.
William W. Keen.
Howard C. Carpenter.
George M. Piersol.
Committee on Housing:
Samuel McC. Hamill, Chairman, 1822 Spruce St.
John W. West.
Francis W. Sinkler.
Delegate to the Chamber of Commerce:
George A. Knowles, 4812 Baltimore Ave.

Stated meeting for business the third Wednesday of January, April, June and October, at 8:30 p.m. Election of officers in January. Scientific meetings the second and fourth Wednesdays of each month.

except July and August and the fourth Wednesday of June and the second Wednesday of September, at 8:30 p. m., all at the College of Physicians' Building, Twenty-second above Chestnut Street.

This society publishes a program of the medical meetings of the various societies for the week, from September to July, inclusive, the editor of which is C. B. Longenecker, 3416 Baring Street.

The society also has a Medical Defense Fund of its own, for which purpose 25 cents is laid aside for each member, the membership being based on the number of members in good standing on March 31 of each year. Ralph B. Evans, Esq., is attorney for this medical defense feature, with Honorable Hampton L. Carson as Consultant.

NORTH BRANCH

Chairman...(No meeting for two years.)

SOUTH BRANCH

Chairman...Thomas M. Armstrong, 1429 Christian St.
Clerk.......John A. McGlinn, 113 S. Twentieth St.

KENSINGTON BRANCH

Chairman...William Morton Kennedy, 2533 North Sixth St.
Clerk.......Otto C. Hirst, 905 W. Lehigh Ave.

WEST BRANCH

Chairman...William T. Johnson, 4729 Baltimore Ave.
Clerk.......Ralph Getelman, 2011 Chestnut St.

NORTHEAST BRANCH

Chairman...Thomas C. Ross, 1701 Harrison St.
Clerk.......F. F. Borzell, 1119 Harrison St.

NORTHWEST BRANCH

Chairman...Josephus T. Ullom, Carpenter and Quincy Sts.
Clerk.......Stanley Q. West, 138 W. Walnut Lane.

SOUTHEAST BRANCH

Chairman...M. B. Cooperman, 1811 S. Broad St.
Clerk.......Louis Edeiken, Sixteenth and Spruce Sts.

All branches meet at 9 p. m., monthly except July and August.

HONORARY MEMBERS

Heckel, Edward B., Jenkins Arcade, Pittsburgh, Pa.
Jackson, Edward, Majestic Building, Denver, Colo.
Leaman, Henry, Leaman Place, Lancaster, Pa.
McAlister, John B., 234 N. Third St., Harrisburg, Pa.
Megargee, George L., 1 Madison Ave., New York City.
Taylor, Lewis H., 83 S. Franklin St., Wilkes-Barre, Pa.

MEMBERS (1,961)

Aarons, Bernard B. H., 1854 N. Thirteenth St.
Abbot, E. Stanley, 421 S. Fifteenth St.
Abbott, Alexander C., 4016 Pine St.
Abbott, Frank C., 6108 Carpenter St.
Abrahamson, Philip, 1341 S. Sixth St.
Adams, Charles T., 5701 Girard Ave.
Adler, Francis Heed, 5922 Greene St., Gtn.
Adler, Lewis H., Jr., 313 S. Seventeenth St.
Aitken, Charles S., 140 N. Broad St.
Albrecht, Herman E., 217 S. Forty-sixth St.
Albright, Markley C., 2130 S. Broad St.
Alexander, Emory G., 1701 Spruce St.
Alexander, Ruth, Young Bldg., Honolulu, Hawaii.
Allen, Francis O., Jr., 2216 Walnut St.
Allen, Jesse Hall, 1327 Spruce St.
Allen, Leo Barton, 2423 W. Allegheny Ave.
Allen, Luther M., 3100 Wharton St.
Allman, Alfred F., 1639 S. Twenty-second St.
Allyn, Herman B., 501 S. Forty-second St.
Alston, Robert Swan, 5348 Wingohocking Terrace, Gtn.
Anders, Andrew, 1724 Diamond St.
Anders, James M., 1605 Walnut St.
Anders, J. Wesley, 1329 W. Somerset St.
Anderson, Joseph W., Montgomery Ave. and Mill Creek Rd., Ardmore (Montgomery Co.).
Andrus, Walter H., 5913 Greene St., Gtn.
Ankeney, Clinton R., 803 N. Twenty-fourth St.
Annesley, William H., 3445 Frankford Ave.
Annon, Walter T., 4532 N. 11th St.
Anspach, Brooke M., 1827 Spruce St.
Antrim, Harold T., 1947 N. Thirteenth St.
Antunovic, Nedjelko, Posta Restante, Glavna Posta, Zagreb, Jugo-Slavia.
Apeldorn, Ernest F., 2113 N. Howard St.
Apple, Clarence E., 1509 Sixty-eighth Ave., Oak Lane.
Applegate, John C., 3540 N. Broad St.
Appleman, Leighton F., 308 S. Sixteenth St.
Armao, Joseph, 1603 S. Twelfth St.
Armstrong, Thomas M., 1429 Christian St.
Arnett, James H., 2540 N. Eleventh St.
Arnett, John Hancock, 1726 Pine St.
Arnold, J. O., 4149 N. Broad St.
Aronson, Joseph D., Seventh and Lombard Sts.
Artelt, Henry, 1521 N. Eighth St.
Asher, Joseph M., 1335 N. Broad St.
Asnis, Eugene J., 1731 Vine St.
Aspel, Joseph, 5803 Spruce St.
Assante, Pasquale, 1335 S. Broad St.
Astley, G. Mason, 5317 Master St.
Atkins, George H., 1727 S. Broad St.
Atkinson, Thomas H., 620 Diamond St.
Atlee, Louis W., 2039 Pine St.
Attix, James C., 2355 N. Thirteenth St.
Auge, Emily G. Whitten, 2734 Wharton St.
Austin, J. Harold. 135 S. Seventeenth St.
Austin, J. Paul, 5915 Greene St., Gtn.
Averett, Leonard, 1016 N. Sixth St.
Axilbund, Samuel, 1831 Chestnut St.
Babbitt, James A., 2117 Chestnut St.
Babcock, W. Wayne, 2033 Walnut St.
Bachman, Harry S., 1134 W. Lehigh Ave.
Bacon, Emily P., 107 S. Twenty-first St.
Bacon, H. Augustus, 1527 Girard Ave.
Bacon, William D., 413 N. Fifty-fourth St.
Baer, Benjamin F., Jr., 2039 Chestnut St.
Baer, Louis, 1233 S. Fourth St.
Bailey, Edwin C., 710 Flanders Bldg.
Bainbridge, Empson H., 1425 Poplar St.
Baird, Frank B., 723 S. Fifty-second St.
Baker, F. Kline, 3019 Diamond St.
Baker, George F., 403 Lafayette Bldg.
Baker, Victor Louis, Foulkrod & Hawthorne Sts.
Baldi, Frederick S., 2117 Porter St.
Baldwin, James H., 1426 Pine St.
Baldwin, Kate W., 1117 Spruce St.
Baldy, J. Montgomery, 409 Lincoln Bldg.
Balentine, Percy L., 1524 Chestnut St.
Ball, Joseph P., 5001 Frankford Ave.
Balliet, Tilghman M., 113 S. 40th St.
Bare, Horace C., 2104 Green St.
Barenbaum, Louis, 519 N. Fourth St.
Barlow, Aaron, 1431 N. Franklin St.
Barlow, Louis E., 3113 Richmond St.
Barnard, Everett P., 245 S. Eighteenth St.
Barnes, Charles S., 2035 Chestnut St.
Barnett, Charles H. J., 4810 Fairmount Ave.
Barnett, Rose Lillian, 1822 W. Erie Ave.
Baron, Abraham I., 2422 N. Twenty-ninth St.
Baron, Samuel, 2124 S. Broad St.
Barrett, Onie Ann, 312 S. Sixteenth St.
Barron, Charles A., 6327 Torresdale Ave.
Bartle, Henry J., 2018 Chestnut St.
Barton, Isaac, 2044 Chestnut St.
Bateman, Sydney E., 5300 Spruce St.
Bates, Hervey L., 134 Manheim St., Gtn.
Batroff, Warren C., 2456 N. Seventeenth St.
Bauer, Charles, 1335 N. Thirteenth St.
Bauer, Edward L., 6112 Germantown Ave.
Bauer, L. Demme, 1713 W. Girard Ave.
Bauer, Marie L., 1613 Fairmount Ave.
Baum, Charles, 1828 Wallace St.
Baumann, Frieda, 107 S. Twenty-first St.

Baun, William D., 623 E. Allegheny Ave.
Baxter, Ada R., 1923 Chestnut St.
Baxter, Hart B., 4812 Springfield Ave.
Bayley, Weston D., 1712 Walnut St.
Bayton, George L., 1840 Christian St.
Beach, Edward W., 5052 Walnut St.
Beardsley, Edward J. G., 258 S. Sixteenth St.
Beardwood, Matthew, Jr., 5504 Ridge Ave.
Beates, Henry, Jr., 260 S. Sixteenth St.
Beaver, Matilda, 2300 Pine St.
Beck, Albert F., 6331 Elmwood Ave.
Becker, Carl E., Lankenau Hospital, Corinthian and Girard Aves.
Becker, John B., 5211 Chester Ave.
Beckley, Allen G., 1710 Diamond St.
Bedrossian, Edward H., 2044 Chestnut St.
Beebe, Charles H., 2117 E. Cumberland St.
Beecroft, Elizabeth McK., 5546 N. Fifth St.
Behney, Charles Augustus, 5726 Lansdowne Ave.
Behrend, Moses, 1738 Pine St.
Belk, William Parks, 4511 Springfield Ave.
Bell, Edward H., 739 Spruce St.
Beltran, Basil R., 1828 S. Rittenhouse Sq.
Bemis, Royal W., 2512 N. Fifth St.
Bender, Engelbert C., 5201 Pine St.
Bender, Leonard F., 4321 Frankford Ave.
Bender, Paul B., 3318 Germantown Ave.
Benedict, Franklin D., 2503 N. Eighteenth St.
Bennett, John, 5911 Girard Ave.
Bennett, William A., 8008 Frankford Ave., Holmesburg.
Berens, Bernard, 2041 Chestnut St.
Berens, Conrad, 2004 Chestnut. St
Berg, Albert P., 711 N. Eighth St.
Bergey, David H., 206 S. Fifty-third St.
Bernard, Melamed, 1417 S. Fourth St.
Bernardy, Henry L., 1319 Pine St.
Bernd, Leo H., 2106 Chestnut St.
Bernhardt, William H., 2209 S. Ninth St.
Bernheim, Albert, 1212 Spruce St.
Bernstein, Mitchell, 1437 S. Broad St.
Bertin, Elmer J., 1702 Oregon Ave.
Bertolet, John Allan, Sixteenth and Locust Sts.
Besser, Joseph P., 3134 Diamond St.
Bethel, John P., 3513 Hamilton St.
Bevier, George, Thirty-fourth and Pine Sts.
Biddle, Stanley E., 5825 Chester Ave.
Biedert, Charles C., 1531 N. Seventeenth St.
Billings, Arthur E., 1703 Spruce St.
Binder, Israel, 833 S. Third St.
Bird, Gustavus C., 1415 Erie Ave.
Birdsall, Joseph C., 116 S. Nineteenth St.
Birney, Herman H., 4016 Chestnut St.
Bishop, Aaron L., 5324 Vine St.
Blackburn, Albert E., 3813 Powelton Ave.
Blackwood, J. Douglas, Jr., c/o Bureau of Navigation Navy Dept., Washington, D. C.
Blair, Mortimer W., 369 Green Lane, Rxb.
Blakeslee, Walter H., 3328 N. Seventeenth St.
Bland, P. Brooke, 1621 Spruce St.
Blayney, Charles A., 5009 Walnut St.
Blechschmidt, Dott Case, 100 S. Fifty-first St.
Blechschmidt, Julius, 100 S. Fifty-first St.
Blieden, Maurice S., 1310 S. Fifth St.
Blitzstein, Rosalie M., 4122 Girard Ave.
Block, Frank Benton, 2035 Chestnut St.
Bloom, Homer C., 1421 Walnut St.
Bloom, Rudolph, 4104 Girard Ave.
Bloomfield, Maximilian D., 2008 N. Park Ave.
Blumberg, Nathan, 708 Pine St.
Bochroch, Max H., 1539 Pine St.
Bockus, Henry L., 4942 Hazel Ave.
Boehringer, H. Winfield, 1811 S. Twenty-second St.
Bogart, Arthur E., 5046 Market St.
Bogaw, Harry A., 1806 S. Eighteenth St.
Boger, John A., 2213 N. Broad St.
Bogia, Reuben A., 760 N. Preston St.
Boles, Russell S., Overbrook Ave & Fifty-third St.
Bolton, Samuel, 4701 Leiper St., Frankford.
Bond, Earl D., 4401 Market St.
Bonnaffon, Samuel A., 3439 Walnut St.
Bonney, Charles W., 1117 Spruce St.
Boon, David John, 1532 N. Fifteenth St.
Boon, W. Thomas, 215 Green Lane, Manayunk.
Booye, Mark Townsend, 1816 N. Thirteenth St.
Borrowes, George H., 160 N. Twentieth St.
Borzell, Francis F., 1119 Harrison St., Frankford.
Boston, Frank E., 813 N. Sixteenth St.
Boston, L. Napoleon, 2024 Chestnut St.
Bottomley, Harold L., 227 W. Rockland St.
Boulton, Eleanore F., P. O. Box 638.
Bove, Anthony D., 1407 S. Thirteenth St.
Bowen, Clement R., 752 S. Sixtieth St.
Bowen, David R., Pennsylvania Hospital, Eighth and Spruce Sts.
Bower, John O., 2033 Walnut St.
Bowman, Benjamin, 2600 S. Sixth St.
Bowman, Frank S., 1711 S. Thirteenth St.
Bowyer, Maud A., 254 S. Sixteenth St.
Boyce, Lee, Route 2, Box 317, Los Angeles, California.
Boyd, George M., 1909 Spruce St.
Boyer, D. Pellman, 4747 Richmond St.
Boyer, Henry P., 4602 Baltimore Ave.
Boyer, J. Clinton, 4032 Spruce St.
Boyer, Merle S., 244 S. Eighth St.
Boyer, Robert, 2448 N. Broad St.
Bradley, Thomas B., 2009 Chestnut St.
Bradley, William N., 1725 Pine St.
Brady, Charles P., 7130 Rising Sun Ave., Fox Chase.
Brady, Franklin, 1815 Frankford Ave.
Bram, Israel, 1431 Spruce St.
Bransfield, John W., 2025 Walnut St.
Brav, Aaron, 917 Spruce St.
Bready, William R., Jr., 1857 N. Eleventh St.
Brecker, N. Francis, 2347 St. Alban's St.
Bremer, Paul F., 839 N. Broad St.
Brenner, Maxwell B., 2919 Richmond St.
Brewster, Joseph H., Broad St. Station.
Brick, J. Coles, 1327 Spruce St.
Bricker, Charles E., 2739 Girard Ave.
Bricker, Sacks, 1101 Wyoming Ave.
Bridgett, Charles R., 3332 Chestnut St.
Bridgett, Frank A., 1809 Chestnut St.
Brinkerhoff, Nelson M., 1831 Chestnut St.
Brinton, Ward, 1423 Spruce St.
Brister, Samuel, 1946 N. Thirty-second St.
Brittingham, James D., 4011 Chestnut St.
Broadfield, John A., 3131 Frankford Ave.
Brody, Louis, 633 Vine St.
Brooke, Emma W., 312 S. Sixteenth St.
Brooke, John A., 264 S. Sixteenth St.
Broomall, Harold S., 7201 Cresheim Rd., Mt. Airy.
Brophy, John A., 2024 Chestnut St.
Brown, Claude P., 120 S. Twenty-Second St.
Brown, H. MacVeagh, 4608 Baltimore Ave.
Brown, Henry P., Jr., 1822 Pine St.
Brown, Maurice, 4905 N. Twelfth St.
Brown, Samuel Horton, 1901 Mt. Vernon St.
Brown, William R., Jr., 2345 E. Cumberland St.
Brubaker, Albert P., 3426 Powelton Ave.
Bruck, Samuel, 1918 N. Franklin St.
Brumbaugh, Simon S., 2923 N. Twelfth St.
Brumm, Seth A., 818 Stock Exchange Bldg.
Bruner, Henry G., 542 N. Eleventh St.
Buchanan, Mary, 2106 Chestnut St.
Buckenham, John Edgar Burnett, 8601 Germantown. Ave.
Buckley, Albert C., Friends Hospital, Frankford.
Bunting, Josiah T., 6410 Germantown Ave.
Burge, Frank Walton, 4226 Walnut St.
Burk, Charles M., 158 N. Twentieth St.
Burke, Joseph J., 5117 Baltimore Ave.
Burke, Richard D., 515 Green St.
Burns, Joseph P., 5233 Chester Ave.

Burns, Louis J., 1906 Chestnut St.
Burns, Michael A., 1909 Chestnut St.
Burns, Stillwell C., 1925 Spring Garden St.
Burr, Charles W., 1918 Spruce St.
Burriss, Walton S., 6645 Torresdale Ave.
Burwell, T. Spotuas, 2008 Fitzwater St.
Busch, John William, 2500 S. Eighteenth St.
Butler, Margaret F., 2127 Green St.
Butler, Ralph, 1926 Chestnut St.
Butt, Miriam M., 2045 Chestnut St.
Butte, Harley J., 2047 Christian St.
Butz, Alfred S., 735 N. Forty-first St.
Buzby, B. Franklin, 4427 Walnut St.
Bynon, Margaret H., Darling (Delaware Co.).
Byrne, Thomas J., 1517 South Broad St.
Cadwalader, Williams B., 1501 Spruce St.
Cahall, William C., 154 W. Chelten Ave., Gtn.
Cahan, Jacob M., 930 N. Eleventh St.
Cairns, Andrew A., 613 E. Phil-Ellena St., Gtn.
Callahan, Andrew, 1829 S. Broad St.
Cameron, George A., Greene St. and Schoolhouse Lane, Gtn.
Cameron, J. Lawson, 1500 Girard Ave.
Campbell, Raymond F., 1311 W. Allegheny Ave.
Cancelmo, J. James, 5112 Spruce St.
Carey, Harry K., 2035 Chestnut St.
Cariss, Walter L., 2043 Walnut St.
Carlucci, Carmine, 819 Christian St.
Carmany, Harry S., 366 Green Lane, Rxb.
Carnett, John B., 123 S. Twentieth St.
Carp, Israel Jay, 1608 S. Tenth St.
Carpenter, Herbert B., 1805 Spruce St.
Carpenter, Howard Childs, 1805 Spruce St.
Carpenter, John T., 2030 Chestnut St.
Carpenter, Samuel A., 2265 N. Sixteenth St.
Carr, Charles D., 1917 Spruce St.
Carrell, James Fell, 1630 Walnut St.
Carreras, Pedro J., 973 N. Fifth St.
Carrier, Frederic, 406 S. Sixteenth St.
Carroll, William, 617 S. Sixteenth St.
Carruthers, Georgina H., 3064 Frankford Ave.
Carson, John B., 1802 Pine St.
Carswell, Harriett T., 2014 Walnut St.
Carter, Andrew D., 753 N. Fortieth St.
Case, Eugene A., 63 LaCrosse Ave., Lansdowne.
Casey, Arthur E. S., 5924 Cedar Ave.
Cassidy, Paul B., 2037 Pine St.
Catford, Darnley Wood, 2901 N. Twenty-fourth St.
Chaiken, Jacob B., 1330 N. Franklin St.
Chance, Burton, 1305 Spruce St.
Chandlee, William H., 4930 Frankford Ave.
Chandler, Charles F., 1750 N. Park Ave.
Chandler, Irene P., 741 N. Forty-first St.
Chandler, Swithin, 2046 Chestnut St.
Chandler, Swithin T., 5904 Greene St., Gtn.
Chapin, Laura S., 1724 Diamond St.
Chapman, John P., Sixth and Walnut St.
Chartock, Samuel, 526 N. Fourth St.
Chesner, Frank M., 703 Wharton St.
Chestnut, James C., 1817 Frankford Ave.
Cheston, Radcliffe, 102 W. Chestnut Ave., Chestnut Hill.
Child, Dorothy, 5023 McKean Ave., Gtn.
Chodoff, Louis, 705 Pine St.
Christensen, Newell A., 6717 Elmwood St.
Christie, W. Edgar, 1805 Pine St.
Ciccone, G. Vico, 1409 S. Broad St.
Claggett, Augustus H., 2615 N. Twenty-ninth St.
Clark, Bennington F. R., Palmerton (Carbon Co.).
Clark, Elizabeth E., 252 High St., Gtn.
Clark, Elizabeth F. C., 2201 DeLancey Place.
Clark, George G., 2221 N. Sixteenth St.
Clark, Jefferson H., 3343 N. Twentieth St.
Clark, John G., 2017 Walnut St.
Clark, William L., Medical Arts Bldg.
Clarke, J. Alexander, Jr., 2111 Locust St.
Cleveland, F. Mortimer, 5100 Walnut St.
Cloud, Charles H., 14 N. Sixtieth St.
Clouting, E. Sherman, 6008 Greene St., Gtn.
Coates, George M., 1811 Spruce St.
Codman, Charles A. E., 4116 Spruce St.
Cogill, Lida Stewart, 1831 Chestnut St.
Cohen, Abraham J., 1630 Spruce St.
Cohen, Herman B., 1301 Spruce St.
Cohen, Samuel, 2523 S. Broad St.
Colcher, Abraham E., 1135 Spruce St.
Cole, Charles J., Elkins Park (Montgomery Co.).
Coles, Stricker, 2103 Walnut St.
Colgan, James F. E., 1022 N. Fifth St.
Colgan, John A., 1809 Chestnut St.
Coll, Charles A., 149 Midvale Ave.
Collins, Arthur A., Oxford (Chester Co.).
Collins, Ebert Caleb, 6029 Germantown Ave.
Collins, Edward W., 2031 E. Allegheny Ave.
Comerford, Joseph F., Box 84, McVeigh, Ky.
Connolly, John M., 1803 S. Fifty-eighth St.
Cook, Archibald M., 1520 Locust St.
Cooke, Dudley T., 1536 S. Broad St.
Cooke, Edwin S., 1831 Chestnut St.
Coombs, James Norman, 1319 N. Broad St.
Cooper, Oscar J., 676 N. Thirteenth St.
Cooperman, Morris B., 1811 S. Broad St.
Cope, Thomas A., 6504 Germantown Ave.
Coplin, William M. L., 606 S. Forty-eighth St.
Copp, Owen, 4401 Market St.
Coppin, M. E. Thompson, 1913 Bainbridge St.
Cornell, Walter S., 729 City Hall.
Cornfeld, Morris, 1336 S. Fourth St.
Cornfeld, Rebecca, 1336 S. Fourth St.
Cortese, Ignazio, 1025 Christian St.
Cowan, Alfred, 121 S. Twentieth St.
Craig, Alexander R., 535 N. Dearborn St., Chicago, Ill.
Craig, Clark R., 331 S. Twelfth St.
Craig, Frank A., 1818 S. Rittenhouse Square.
Cramp, Joseph A., 1902 Chestnut St.
Crampton, George S., 1700 Walnut St.
Crandall, T. Vaughan, 114 S. Eighteenth St.
Creighton, William J., 1905 Chestnut St.
Crosby, William Smith, 1833 Pine St.
Croskey, John W., 1909 Chestnut St.
Crowe, F. Beresford, 728 S. Sixtieth St.
Crueger, Edward A., 1831 Chestnut St.
Culbertson, Walter L., 2502 N. Twenty-ninth St.
Cunningham, J. Metz, 2018 E. Chelten Ave., Gtn.
Cunningham, Joseph F., 4356 Penn St., Frankford.
Currie, Charles A., 50 W. Walnut Lane, Gtn.
Currie, Thomas R., 512 W. Lehigh Ave.
Custer, David D., 137 Green Lane, Manayunk.
Custer, Ella B., 137 Green Lane, Manayunk.
Cutting, Charles Theodore, 112 North Broad St.
Czubak, Matthew, Wheeling, W. Va.
DaCosta, J. Chalmers, 2045 Walnut St.
Daland, Judson, 317 S. Eighteenth St.
Daly, Joseph A., 2329 N. Howard St.
Daniels, Clarence D., 1338 Spruce St.
Dannenberg, Arthur M., 256 S. Fifteenth St.
d'Apery, Tello J., 767 N. Fortieth St.
Davidson, Arthur J., 200 S. Twelfth St.
Davies, John R., Jr., 302 S. Nineteenth St.
Davis, Edward P., 250 S. Twenty-first St.
Davis J. Leslie, 135 S. Eighteenth St.
Davis, Richard S., 302 School Lane, Gtn.
Davis, T. Carroll, 3128 N. Broad St.
Davis, Warren B., 135 S. Eighteenth St.
Davisson, Alexander H., 4514 Springfield Ave.
Day, Elbert O., 27 Carpenter Lane, Mt. Airy.
Deardorff, William H., 5049 Hazel Ave.
Deaver, Henry C., 1701 Spruce St.
Deaver, John B., 1634 Walnut St.
Deaver, Richard W., 6105 Main St., Gtn.
DeCarlo, John, 1124 Ellsworth St.
Deehan, Sylvester James, 843 N. Twenty-fourth St.
DeFord, Moses, 1524 Chestnut St.
Deichler, L. Waller, 2028 Chestnut St.

Deitz, George W., Jr., 1744 Orthodox St., Frankford.
DeLong, Perce, 1909 Chestnut St.
Dempsey, William T., 2606 N. Fifth St.
Dengler, Robert H., 2324 N. Broad St.
Denney, George H., Medical Arts Bldg.
Dercum, Francis X., 1719 Walnut St.
Despard, Duncan L., 1806 Pine St.
Devitt, Benjamin F., 1503 N. Fifteenth St.
Devitt, William, R. F. D., Georgetown, Del.
Devlin, Albert J., 1402 Lindley Ave.
Dewees, Ernest J., 409 Chestnut St.
Dewey, Julian H., 78 N. Clinton Ave., Trenton, N. J.
DeYoung, A. Henriques, 1949 N. Broad St.
Diamond, Henry N., 2136 S. Fifth St.
Dick, John W., 1945 Christian St.
Dickinson, Harrington S., 3124 N. Broad St.
Diez, M. Luise, 305 Blackstone Boulevard, Providence, R. I.
Dillard, Henry, 234 S. Twentieth St.
Dintenfass, Henry, 415 Pine St.
Diseroad, Benjamin F., 901 W. Lehigh Ave.
Diven, John, 2038 Chestnut St.
Dix, Archibald L., 5140 Greene St., Gtn.
Doane, Joseph C., Philadelphia Gen. Hospital.
Dolson, Frank E., 1524 Chestnut St.
Dommoyer, Ida L., 2443 N. Seventeenth St.
Donnelly, Daniel J., 1500 W. Erie Ave.
Donnelly, Dorothy, 2103 Chestnut St.
Donnelly, Edward J., 3000 W. Lehigh Ave.
Donnelly, James Francis, 1605 N. Fifteenth St.
Donnelly, Robert T. M., 1242 W. Lehigh Ave.
Donoghue, Robert L., 2700 N. Broad St.
Dorr, Henry I., 15 Edgehill Road, Winchester, Mass.
Dorrance, George M., 2025 Walnut St.
Dorsett, Ernest M., 1531 N. Nineteenth St.
Dorsett, Rae S., 213 S. Forty-sixth St.
Dougherty-Trexler, Henrietta M., 923 W. Susquehanna Ave.
Douglass, Malcolm, 1814 Tioga St.
Douredoure, Eveleen A., 4107 Baltimore Ave.
Downs, Robert N., Jr., 5916 Greene St., Gtn.
Downs, Thomas A., 409 N. Forty-first St.
Doyle, Alfred S., 5849 Chestnut St.
Drake, Ellwood L., 2762 Pratt St., Bridesburg.
Dripps, John H., 1812 N. Eleventh St.
Druce, Thomas W., 6339 Elmwood Ave.
Drumheller, Floyd D., 5128 Chester Ave.
Drummond, Winslow, 1824 N. Thirteenth St.
Dubbs, John H., 2722 N. Twelfth St.
Dubbs, Robert L., 1622 S. Eighteenth St.
Dubin-Alexandroff, Charles W., 706 N. Fifth St.
Dukes, John L., 344 N. Fifty-second St.
Dunbar, Arthur W., 2412 S. Twenty-first St.
Duncan, Harry A., 2615 W. Somerset St.
Dundore, Claude A., The Wellington.
Dyson, Frank M., 5101 Greene St., Gtn.
Earnshaw, Henry C., Bryn Mawr (Montgomery Co.).
Ebaugh, Franklin G., Philadelphia Hospital.
Eckfeldt, John W., 6312 Vine St.
Edeiken, Louis, 2412 S. Fifth St.
Edwards, Thomson, 5827 Willows Ave.
Eft, Frederick, 1340 N. Thirteenth St.
Egbert, Seneca, 4814 Springfield Ave.
Eglick, Samuel, 525 N. Fourth St.
Egly, H. Conrad, Quarryville (Lancaster Co.).
Eiman, John, 516 N. Thirty-ninth St.
Eisenhardt, William G., 2102 N. Sixth St.
Elder, Frank H., 6038 Overbrook Ave.
Eldredge, Clarence S., 2330 N. Seventeenth St.
Eliason, Eldredge L., 320 S. Sixteenth St.
Ellis, Samuel, 6203 Elmwood Ave.
Ellis, William T., 1926 N. Nineteenth St.
Ellison, Richard T., 111 Rex Ave., Chestnut Hill.
Ellison, Thomas, 2324 Bridge St., (Brides).
Ellzey, James Murray, 106 Highland Ave., Chestnut Hill.
Elmer, Walter G., 1801 Pine St.
Ely, Thomas C., 2018 Chestnut St.
Ely, William C., 3912 Chestnut St.
Embery, Frank, 4660 Frankford Ave.
Emich, John P., 3245 N. Front St.
Enders, William J., Home for Consumptives, Chestnut Hill.
Endres, Joseph M., 1416 S. Fifteenth St.
Engelhardt, Carolina S. Ruth, Engelhardt Sanatarium, Lansdale (Montgomery Co.).
Engle, Ralph L., 827 S. Sixtieth St.
Englerth, Louis D., 4912 Frankford Ave.
Enoch, George F., 8037 Frankford Ave.
Epstein, Abraham, 4027 Girard Ave.
Erck, Theodore A., 251 S. Thirteenth St.
Erney, Erwin H., 232 S. 21st St.
Ersner, Matthew S., 1729 Pine St.
Eshleman, Robert H., 4719 Baltimore Ave.
Eshner, Augustus A., 1019 Spruce St.
Esken, Harry G., 2517 W. Allegheny Ave.
Evans, William, 4007 Chestnut St.
Eves, Curtis C., 247 S. Seventeenth St.
Ewing, Charles H., 1330 S. Seventeenth St.
Ezickson, William J., 2143 N. Howard St.
Fadil, Alexander, 140 N. Broad St.
Fanz, John I., Tenth and Walnut Sts.
Faries, Randolph, 2010 Chestnut St.
Faris, George T., 17 Roberts Ave., Glenside (Montgomery Co.).
Farley, David L., 1906 Pine St.
Farr, William W., 20 W. Ashmead Place, Germantown.
Farrar, Joseph D., 7103 York Rd.
Farrell, Martin Joseph, 4657 Lancaster Ave.
Farrington, Charlotte S., 2130 W. Passayunk Ave.
Faught, Francis A., 5006 Spruce St.
Felderman, Leon, 4428 York Rd.
Feldman, Jacob B., 1339 N. Seventh St.
Feldstein, Sidney L., 2145 N. Fifteenth St.
Felt, Carle Lee, 2037 Chestnut St.
Fenerty, Vincent J., 2217 E. Cumberland St.
Fenton, Thomas H., 1319 Spruce St.
Ferguson, Albert D., 50 E. Johnson St., Gtn.
Ferguson, George McIntyre, 706 S. Forty-ninth St.
Ferguson, William N., 125 W. Susquehanna Ave.
Ferguson, William N., Jr., 2725 N. Fifth St.
Ferris, Frank S., 101 Easton Road, Glenside (Montgomery Co.).
Ferry, Alfred A., 629 N. Sixty-third St.
Fetterman, Wilfred B., 7047 Germantown Ave.
Fetterolf, George, 2047 Chestnut St.
Fewell, Alexander G., 4207 Chester Ave.
Fiet, Harvey J., 2152 N. Fourth St.
Fife, Charles A., 2038 Chestnut St.
Finck, Edward B., 1518 Pine St.
Fineman, Harry E., 1324 S. Fifth St.
Fingles, Albert A., 2229 Vine St.
Fischelis, Philipp, 2132 N. Nineteenth St.
Fischer, Charles, 2082 E. Cumberland St.
Fish, Harry C., 200 N. Fiftieth St.
Fisher, Frank, 1911 Arch St.
Fisher, Henry, 2345 E. Dauphin St.
Fisher, Henry M., 1027 Pine St.
Fisher, Herbert P., 5532 Wayne Ave., Gtn.
Fisher, John M., 222 S. Fifteenth St.
Fisher, John V., 6027 Larchwood Ave.
Fisher, Lewis, 1820 Spruce St.
Fisher, Mary, 1911 Arch St.
Fisher, Mulford K., 3110 Diamond St.
Fitzpatrick, Ignatius L. J., 1807 S. Eighteenth St.
Flannery, Leo G., S. W. Cor. Broad and York Sts.
Fleming, Thomas J., 2225 Green St.
Flick, John B., 738 Pine St.
Flynn, J. Cajetan, 1225 N. Sixth St.
Foehrenbach, Julius E., 3228 N. Fifteenth St.
Ford, Walter A., 256 S. 15th St.
Formad, Marie K., 927 N. Broad St.
Forman, Horace J., Jr., 136 E. Herman St., Gtn.
Forst, John R., 166 W. Coulter St., Gtn.

Foulkrod, Collin, 3910 Chestnut St.
Fox, C. Calvin, 350 S. Sixteenth St.
Fox, Herbert, 3902 Locust St.
Fox, L. Webster, 303 S. Seventeenth St.
Fraley, Frederick, 1804 Pine St.
Fralinger, John J., 1827 S. Second St.
Francine, Albert P., State Dept. of Health, Harrisburg.
Francis-Self, Marian, 406 Roger Williams Bldg.
Frank, Abraham, 1917 N. Thirty-second St.
Franklin, Clarence P., 1527 Spruce St.
Franklin, M. Burnett, 1423 Diamond St.
Franklin, Melvin M., 6124 Greene St., Gtn.
Fraser, Hugh D., 6618 Woodland Ave.
Frazier, Charles H., 3600 Walnut St.
Freas, Henry M., 1319 W. Allegheny Ave.
Freeman, Frank E., 721 N. Sixty-third St.
Freeman, Walter J., Jr., 1832 Spruce St.
Freeman, Walter S., 909 W. Susquehanna Ave.
Fretz, Howard G., 1207 W. Erie Ave.
Freund, Henry H., 1443 S. Broad St.
Frick, J. Howard, 25 High St., Gtn.
Fridy, Cyrus W., S. E. Cor. Fifty-eighth St. and Thomas Ave.
Friedenberg, Samuel, 717 Pine St.
Friedmann, Adolph H., 161 N. Sixtieth St.
Fries, Charles J. V., Jr., 34 S. Twenty-first St.
Fries, Irvin A., 1312 S. Broad St.
Fritch, J. Scott, 1318 Spruce St.
Fritts, William H., 535 N. Eleventh St.
Fritz, Clarence H., 1822 S. Broad St.
Fritz, W. Wallace, 1600 Summer St.
Frosch, Frank J., 2736 N. Twelfth St.
Fuchs, Morris L., 2105 N. Eighteenth St.
Fuller, Daniel H., Pennsylvania Hospital for Insane, Market and Forty-fourth St.
Fuller, Dwight B., 208 N. Thirty-fourth St.
Fulton, T. Chalmers, Schuyler Bldg., Sixth and Diamond Sts.
Fulton, Z. M. Kempton, 1111 W. Lehigh Ave.
Funk, Elmer H., 1318 Spruce St.
Funk, William W., 7906 Germantown Ave.
Furbush, C. Lincoln, 4300 Locust St.
Fussell, George D., 421 Lyceum St., Rxb.
Gabrio, Max R., 1736 Welsh Road, Bustleton, Pa.
Gadd, Samuel W., 2114 S. Sixteenth St.
Gaillard, A. Theodore, 1926 Shunk St.
Galbraith, James L., 2239 N. Nineteenth St.
Gallagher, James S., 207 E. Sixth St., Lansdale (Montgomery Co.).
Gallagher, John P., 4104 York Road.
Gans, S. Leon, State Dept. of Health, Harrisburg (Dauphin Co.).
Gartman, Leo N., 523 Pine St.
Garvey, Joseph P., 3639 Spring Garden St.
Gaskill, Henry K., N. E. Cor. Sixteenth and Spruce Sts.
Gaston, Ida E., 2833 Diamond St.
Gates, Manley F., Commandant's Office, Navy Yard, (Phila.).
Geisler, Howard D., 132 W. Walnut Lane, Gtn.
Gerhard, Arthur H., 726 Richmond St.
Gerhard, Samuel P., 639 N. Sixteenth St.
Gerlach, Ella M., 3706 Brown St.
Gessler, Charles W., 1311 S. Broad St.
Getelman, Ralph E., 2011 Chestnut St.
Getson, Philip, 1301 E. Moyamensing Ave.
Getty, Mary, 254 S. Sixteenth St.
Geyer, George W., 5705 Chester Ave.
Gibbon, John H., 1608 Spruce St.
Gibson, Ann Tomkins, 6323 Lancaster Ave.
Gilbride, John J., 1934 Chestnut St.
Gildersleve, George H., 525 N. Sixth St.
Gile, Benjamin C., 1627 Walnut St.
Gilhool, Edward W., 3818 N. Broad St.
Gill, A. Bruce, The Lenox, Thirteenth and Spruce Sts.
Gilliland, Samuel H., Ambler (Montgomery Co.)
Gilmour, William Roger, 237 S. Forty-fourth St.
Gilpin, Sherman F., 1934 Chestnut St.
Ginsberg, Gershon, 1534 N. Eighth St.
Ginsberg, Hyman M., 1013 S. Sixtieth St.
Ginsburg, Morris, 1511 S. Ninth St.
Ginsburg, Samuel A., 1901 S. Broad St.
Girardeau, Gladys, The Covington.
Githens, Thomas S., Thirty-Ninth and Chestnut Sts.
Girvin, John H., 2120 Walnut St.
Gittelson, Samuel J., 1017 Spruce St.
Gittings, J. Claxton, 1828 Pine St.
Given, Ellis E. W., 2714 Columbia Ave.
Gleason, E. Baldwin, 2033 Chestnut St.
Goddard, Herbert M., 1531 Spruce St.
Godfrey, Henry G., 2054 E. Cumberland St.
Goepp, R. Max, 124 S. Eighteenth St.
Goldbacher, Lawrence, 4843 Pulaski Ave.
Goldberg, Harold G., 1925 Chestnut St.
Goldberg, Joseph M., 855 N. Seventh St.
Goldberg, Maurice, 1724 S. Broad St.
Goldberg, Samuel, 4546 N. Broad St.
Goldburgh, Harold L., 517 Pine St.
Golden, Henry, 1701 S. Broad St.
Golden, Louis M., 5201 Chester Ave.
Goldring, Emil J., 1722 N. Eighth St.
Goldsmith, N. Ralph, 2035 Chestnut St.
Goldsmith, S. Byron, 1338 Spruce St.
Goldstein, A. Otto, 979 N. Fifth St.
Goldstein, Joseph, 2437 W. Lehigh Ave.
Good, William H., 5309 Rising Sun Lane.
Goodman, Edward H., 248 S. Twenty-first St.
Goodman, Robert, 221 Fitzwater St.
Goodwin, Warren C., 3740 Powelton Ave.
Goos, Harry W., N. E. Cor. Amber and Dauphin Sts.
Gordon, Alfred, 1812 Spruce St.
Gordon, Benjamin L., 1115 Spruce St.
Gordon, Chester A. A., 4062 Haverford Ave.
Gordon, Samuel, 2003 S. Fourth St.
Gordon, Samuel F., 1326 Rockland St.
Gorman, John F., 2523 West Allegheny Ave.
Goss, Charles, 1316 W. Allegheny Ave.
Gottshall, Florence M., 1613 S. Thirteenth St.
Gouterman, Joseph I., 1507 Poplar St.
Gowen, Francis V., 904 E. Chelten Ave., Gtn.
Gowens, Henry L., Jr., 260 S. Seventeenth St.
Grady, William P., 1214 N. Seventh St.
Graf, Edmund L., 927 S. Sixtieth St.
Graham, Edwin E., 1713 Spruce St.
Graham, John, 326 S. Fifteenth St.
Grahn, S. Norman, 1744 N. Tenth St.
Grala, William Leon, 101 N. Church St., Hazleton (Luzerne Co.).
Gray, Alfred P., 1818 Orthodox St.
Gray, George B., 6118 W. Oxford St.
Gray, Robert L., 3031 N. Broad St.
Grayson, Charles P., 262 S. Fifteenth St.
Greco, Toby A., 1608 S. Broad St.
Green, Max, 2007 S. Fourth St.
Greenbaum, Sigmund S., 1714 Pine St.
Greenewalt, Frank L., 1424 Master St.
Greenway, Samuel B., 2717 N. Twelfth St.
Griffith, J. P. Crozer, 1810 Spruce St.
Griffith, Reynold S., 1302 Pine St.
Grim, Ella Williams, 32 N. Fiftieth St.
Grime, Robert T., 3830 Locust St.
Grimes, Charles Henry, 3546 N. Broad St.
Grimes, Robert B., 1147 S. Broad St.
Griscom, J. Milton, 1925 Chestnut St.
Groff, Charles A., 222 N. Thirteenth St.
Groff, Henry C., S. E. Cor. Broad and Venango Sts.
Groff, John W., 3500 N. Broad St.
Gross, Samuel, 645 Ritner St.
Gulezian, Lucy E., 5636 Catharine St.
Gummey, Frank B., 5418 Greene St., Gtn.
Gurin, Adolph A., 723 Pine St.
Guthrie, D. Clinton, 722 N. Fortieth St.

Haerer, Frederick J., 1241 Washington St., Cape May, N. J.
Haig, Charles R., Jr., 1818 Diamond St.
Haines, Fannie C., State Hospital, Taunton, Mass.
Haines, Wilbur H., Medical Arts Bldg., Sixteenth and Walnut Sts.
Hale, George, Jr., 29 W. Main St., Haddonfield, N. J.
Hale, William H. L., 313 S. Seventeenth St.
Halperen, Abraham D., 2335 S. Eighth St.
Hall, William D. W., 801 S. Forty-ninth St.
Hamill, Samuel McC., 1822 Spruce St.
Hamill, Stephen Aspinall, 2335 Oxford St.
Hamilton, Samuel W., Byberry, Phila.
Hamilton, William A., 602 E. Girard Ave.
Hamilton, William T., 1221 W. Lehigh Ave.
Hanmer, A Wiese, 218 S. Fifteenth St.
Hammond, Frank C., 3311 N. Broad St.
Hammond, Levi J., 1222 Spruce St.
Hancock, Frank Bacon, 2065 N. Sixty-third St.
Hand, Alfred, Jr., 1724 Pine St.
Hanna, George C., 4840 Frankford St.
Hanna, Hugh, 2843 Diamond St.
Hammum, William, 844 N. Twenty-third St.
Hansell, Howard F., N. E. Cor. Seventeenth and Walnut Sts.
Harbaugh, Charles H., 2111 Walnut St.
Harbridge, D. Forest, Goodrich Block, Phoenix, Ariz.
Hardin, Julia H., 6323 Lancaster Ave.
Harding, James C., 5909 Greenway Ave.
Hare, Hobart A., 1801 Spruce St.
Hargett, Walter S., 5617 Girard Ave.
Harris, Frank D., 2315 N. Seventeenth St.
Harris, Joseph G., 728 Fitzwater St.
Harris, Raymond J., 1921 Chestnut St.
Harrison, Francis G., 116 S. Nineteenth St.
Harrison, Rose, 1836 S. Broad St.
Harrison, William J., 3452 Kensington Ave.
Harte, Richard H., 1503 Spruce St.
Hartley, Harriet L., 1534 N. Fifteenth St.
Hartley, T. Ruth, 1534 N. Fifteenth St.
Hartman, Frederick L., 1833 Spruce St.
Hartz, William, 5559 Spruce St.
Harvey, E. Marshall, Media (Delaware Co.).
Hatfield, Charles J., Phipps Institute.
Hawke, Wilfred W., 2028 Chestnut St.
Hawkins, Charles L., Taft California.
Hawman, E. G., 4051 N. Broad St.
Hawthorne, Herbert Reid, 606 N. Thirteenth St.
Hayes, John Agnew, 1903 Arch St.
Hazzard, Henry Draper, 1243 S. Broad St.
Head, Joseph, 235 S. Fifteenth St.
Hearn, Marion, Thirty-ninth and Chestnut Sts.
Hearn, William P., 2119 Spruce St.
Hearne, Charles S., 1632 Chestnut St.
Heath, Frances J., care Methodist Mission, Peking, China.
Hebert, Arthur W., 119 E. Lehigh Ave.
Hebsacker, William F., 2151 E. Cumberland St.
Heck, John A., 958 N. Fifth St.
Heed, Charles R., 1205 Spruce St.
Heilman, Eugene A., 876 Wynnewood Rd.
Heimer, Louis B., 2404 N. Thirty-second St.
Heineberg, Alfred, Sixteenth and Spruce Sts.
Heinkel, Howard F., 107 E. Lehigh Ave.
Heisler, Frank J., 3136 Diamond St.
Heisler, John C., 3829 Walnut St.
Heller, Edwin A., 1911 N. Broad St.
Hemminger, Edward F., 10 Kirklyn Ave., Upper Darby (Delaware Co.).
Henry, J. Norman, 1906 Spruce St.
Henry, Melvin K., 5011 Tacony St.
Henry, Robert W., 768 S. Fifteenth St.
Herbert, J. Frederick, 1523 Locust St.
Herbert, J. Frederick, Jr., 1523 Locust St.
Herchelroth, Jacob G., 4837 Baltimore Ave.
Herman, Leon, Medical Arts Bldg.
Herman, Marguerite Bailey, 1103 Spruce St.
Herman, Maxwell, 1103 Spruce St.
Hermance, William Oakley, 1831 Chestnut St.
Herrman, Clinton S., 5101 N. Broad St.
Herrman, Max F., 1411 Erie Ave.
Hewish, Edgar M., 2131 Columbia Ave.
Hewson, Addinell, 2120 Spruce St.
Hewson, William, 6300 Overbrook Ave.
Hibshman, Henry Z., 1831 Chestnut St.
Hibsman, Henry H., 5229 Greene St.
Higbee, William S., 1703 S. Broad St.
Higgate, Wilford O., 822 N. Forty-first St.
Higgins, Frank J., 2229 N. Broad St.
Higgins, James C., 141 N. Nineteenth St.
Hildrup, Josephine Wheeler, 18 Wellington Rd., Brookline, Mass.
Hilferty, Edward F., 2225 N. Twenty-first St.
Hill, Anthony J., 1609 W. Girard Ave.
Hinkle, William M., 1323 N. Thirteenth St.
Hinman, Alma Mae, 208 Rochelle Ave., Wissahickon.
Hinson, Eugene T., 1333 S. Nineteenth St.
Hinton, Drury, 4214 Walnut St.
Hirsch, Charles S., S. W. Cor. Ninth and Pine Sts.
Hirschler, Rose, 126 S. Seventeenth St.
Hirst, Barton C., 1821 Spruce St.
Hirst, John Cooke, 1823 Pine St.
Hirst, Otto C., 905 W. Lehigh Ave.
Hitschler, William A., 1832 Spruce St.
Hoban, Charles J., 1609 S. Broad St.
Hobensack, J. Rex, 1706 Columbia Ave.
Hockaday, Agnes, 316 Shadeland Ave., Drexel Hill (Delaware Co.).
Hodge, Edward B., 2019 Spruce St.
Hofkin, Adolph F., 922 N. Fifth St.
Holland, H. Albert, 8505 Germantown Ave.
Hollingshead, Irving W., 123 S. Eighteenth St.
Hollopeter, William C., 1520 Spruce St.
Holloway, Thomas B., 1819 Chestnut St.
Holmes, E. Burvill, 714 Montgomery Ave., Wynnewood (Montgomery Co.).
Holmes, John W., 819 N. Sixty-third St.
Holtzhausser, George J., 160 W. Girard Ave.
Hooker, Richard S., 2147 N. Howard St.
Hopkins, Arthur H., 1726 Pine St.
Hopkins, Frederick M., 107 N. Fifty-seventh St.
Hopkinson, Oliver, 1101 Pine St.
Hopkinson, Richard Dale, 122 York Road, Jenkintown (Montgomery Co.).
Horan, William F., 6327 Lancaster Ave.
Horgan, Edward, 2208 Walnut St.
Horne, S. Hamill, Sixteenth and Spruce Sts.
Hornstine, Harry H., 615 N. Seventh St.
Hornstine, Nathan H., 530 Spruce St.
Houser, Lewis J., 162 N. Eighth St.
How, Harold W., P. O. Box 172, Bryn Mawr (Montgomery Co.).
Howard, Marie Seixas, 68 Seaman Ave., New York City.
Hoyt, Daniel M., The Tracy, Thirty-sixth St. above Chestnut.
Hudson, Harry, 1602 Erie Ave.
Hughes, Charles Ralston, 247 S. Seventeenth St.
Hughes, Elizabeth M., 1924 N. Sixty-third St.
Hughes, William E., 3945 Chestnut St.
Hume, John E., 1829 Spruce St.
Huneker, Minnie Arnold, The Lennox, Thirteenth and Spruce Sts.
Hungerbuehler, John C., 1530 N. Franklin St.
Hunsicker, Hannah M., 5200 Rising Sun Ave.
Hunt, Laura Emma, 213 S. Seventeenth St.
Hunter, Robert T., 928 N. Sixty-third St.
Huntoon, Frank M., c/o H. K. Mulford Co., Glenolden (Montgomery Co.).
Husik, David N., 1303 Locust St.
Hustead, Frank H., 5112 N. Broad St.
Huston, David T., 1809 Chestnut St.
Hutchinson, James P., 133 S. Twenty-second St.
Huttenlock, Robert E., 1122 E. Columbia Ave.

Hutton, Frederick C., 1458 N. Fifteenth St.
Immerman, Samuel L., 809 S. Sixtieth St.
Ingle, Henry B., 1937 Fairmount Ave.
Ingraham, S. Cooke, 125 Sumac St., Wissahickon.
Inslee, James P., 1509 Arch St.
Irwin, James A., 2019 S. Broad St.
Irwin, William, 634 Snyder Ave.
Ivy, Robert H., 1503 Medical Arts Bldg.
Jackson, Chevalier, 128 S. Tenth St.
Jacob, Louis H., 141 W. Susquehanna Ave.
Jacob, Moses, 1316 S. Fifth St.
Jacobs, Leopold M., 2035 Chestnut St.
Jaffe, Jacob K., 1434 Spruce St.
Jameson, Howard Leon, 2133 S. Sixteenth St.
Janvier, Florizel, Oxford Pike and Leiper Sts.
Jenks, Horace H., 918 Clinton St.
John, Rutherford Lewis, 248 S. Twenty-first St.
Johnson, Alice Elizabeth, 17 S. Twenty-first St.
Johnson, Elmer E., 256 S. Fifteenth St.
Johnson, George Ernest, 5441 Chester Ave.
Johnson, Russel H., East Bell's Mill Rd., Chestnut Hill.
Johnson, Theodore M., 432 N. Fifty-Second St.
Johnson, William N., 6460 Germantown Ave.
Johnson, William T., 2018 Chestnut St.
Jolley, W. A., 301 E. Lancaster Ave., Wayne (Delaware Co.).
Jonas, Leon, 2253 N. Seventeenth St.
Jones, A. Arthur, 1810 Jefferson St.
Jones, Charles J., 256 S. Fifteenth St.
Jones, Clifford B., 5538 Wayne Ave., Gtn.
Jones, Eleanor C., 1531 N. Fifteenth St.
Jones, Harold W., 1805 Pine St.
Jones, John Bayley, 938 W. Lycoming St.
Jones, John F. X., 103 S. Twenty-first St.
Jopson, John H., 1824 Pine St.
Judd, Clarence Wrigley, 4413 Richmond St.
Judson, Charles F., 1005 Spruce St.
Jump, Henry D., 2019 Walnut St.
Jurist, Louis, 1308 N. Broad St.
Kahn, Bernard L., 2125 S. Fourth St.
Kalteyer, Frederick J., 2003 Chestnut St.
Kamerly, E. Forrest, Jr., 1130 Spruce St.
Kane, Clinton A., c/o Trust Dept., 318 Chestnut St.
Kane, Leo A., 2658 E. Thompson St.
Kapeghian, Ervant, 1029 Shackamaxon St.
Kapp, David, 1901 N. Broad St.
Karpeles, Maurice J., 146 W. Chelten Ave., Gtn.
Katar, Felix M., 108 S. Thirty-Sixth St.
Katzenstein, George P., 1915 N. Broad St.
Kauders, H. Randle, 648 E. Chelten Ave., Gtn.
Kaufman, A. Spenser, N. E. Cor. Spruce and Sixteenth Sts.
Kaufman, Isadore, 312 Otis Bldg., N. W. Cor. Sixteenth and Sansom Sts.
Kay, James, 600 W. Olney Ave.
Keating, F. Raymond, 2100 S. Seventeenth St.
Keating, Howard F., 1761 N. Sixty-first St.
Keating, Peter M., 2130 Pine St.
Keeler, J. Clarence, Medical Arts Bldg.
Keely, Robert N., The Art Club, 220 S. Broad St.
Keenan, Andrew Joseph, 1818 S. Rittenhouse Square.
Keen, William W., 1520 Spruce St.
Keene, Floyd E., Medical Arts Bldg.
Kehler, B. Frank, 316 S. Sixteenth St.
Keiser, Elmer E., 6933 Tulip St.
Keller, Albert P., 136 Race St.
Keller, Augustus H., 2551 E. Clearfield St.
Keller, Frederick E., 2217 E. Huntingdon St.
Keller, Joseph C., 709 W. Erie Ave.
Kellner, Henry C. F., 1337 E. Montgomery Ave.
Kelly, Francis J., 407 S. Forty-second St.
Kelly, George F. J., 2114 S. Fifteenth St.
Kelly, James A., 1815 Spruce St.
Kelly, Maude M., 1200 Spruce St.
Kelly, Samuel J. J., 3857 N. Broad St.
Kelly, Thomas C., 105 Schoolhouse Lane, Gtn
Kelly, William F., 1200 Poplar St.
Kelsey, Ernest W., 1217 Spruce St.
Kempton, Augustus F., 2118 Pine St.
Kennedy, James W., 241 N. Eighteenth St.
Kennedy, William Morton, 2535 N. Sixth St.
Kercher, Delno E., 1534 Pine St.
Kern, Richard A., 2319 E. Dauphin St.
Kerns, Samuel P., 1432 Diamond St.
Kessler, William C., 1130 S. Fifty-sixth St.
Kevin, Robert Oliver, 803 S. Forty-ninth St.
Keyes, Baldwin Longstreth, 4401 Market St.
Killian, Frederick W., 3725 Spring Garden St.
Killian, Wayne T., 4501 Spruce St.
Kimmelman, Louis, 2401 N. Fifth St.
Kimmelman, Simon, 1730 S. Broad St.
Kindbom, Hanna, 1507 Poplar St.
Kinney, Willard H., 315 S. Seventeenth St.
Kirby, Ellwood R., 1202 Spruce St.
Kirk, George W., 1427 Girard Ave.
Kirshbaum, Helen, 1303 Locust St.
Kirshner, Louis A., 1944 N. Thirty-second St.
Kitchen, Joseph S., 3846 N. Eighteenth St.
Kitchen, Philip Gordon, 352 Penn Road, Wynnewood (Montgomery Co.).
Kitchin, Edwin Paul, 154 W. Tabor Rd., Olney.
Klapp, Wilbur P., 1716 Spruce St.
Klauder, Joseph V., 1922 Spruce St.
Klein, Alexander, 1223 Spruce St.
Klein, Henry L., 2831 Diamond St.
Klein, Thomas, 1717 Pine St.
Klemm, Adam, 1204 W. Lehigh Ave.
Klimas, Enoch G., 2538 E. Allegheny Ave.
Kline, Harvey W., 3636 N. Seventeenth St.
Klopp, Edward Jonathan, 1611 Spruce St.
Klopp, Peter P., 618 W. Lehigh Ave.
Knipe, Jay C., 2035 Chestnut St.
Knipe, Norman L., 701 S. Fifty-second St.
Knorr, John K., Jr., 2235 N. Sixteenth St.
Knowles, Frank C., 2022 Spruce St.
Knowles, George A., 4812 Baltimore Ave.
Knox, Andrew, 501 E. Allegheny Ave.
Knox, Henry, 5000 Spruce St.
Kobler, Henry B., Sixty-third and Media Sts.
Koenig, Augustus, 1324 Pine St.
Koenig, Carl F., 1734 Harrison St., Frankford.
Kohlman, Samuel H., 4536 Old York Rd.
Kohn, Bernard, 1516 N. Fifteenth St.
Konzelmann, Frank W., 3638 N. Twenty-first St.
Kolmer, John A., Cynwyd (Montgomery Co.).
Kownacki, Francis J., 2643 E. Ontario St.
Kraker, Florence E., 1507 Medical Arts Bldg.
Krall, John T., 1421 Chestnut St.
Kramer, David Warren, 2035 Chestnut St.
Kraus, Gabriel J., 3153 Richmond St.
Krauss, Frederick, 1701 Chestnut St.
Krauss, Walter R., 1614 N. Sixteenth St.
Kremens, Maxwell B., 2514 S. Broad St.
Kremer, David N., 5916 Spruce St.
Krieg, Henry C., 655 E. Allegheny Ave.
Kropp, Robert Stroud, 5113 N. Broad St.
Krumbhaar, Edward B., Box 4310, Chestnut Hill.
Krusen, Wilmer, 127 N. Twentieth St.
Kuehner, Howard M., 2174 E. York St.
Kurtz, Arthur D., 1501 Diamond St.
Kurz, Karl J., 7111 Chew St., Mt. Airy.
Kyle, Christian B., 703 W. Erie Ave.
Kyle, E. Bryan, 565 East Main St., Moorestown, N. J.
Lacy, Henry A., 743 N. Seventeenth St.
Laessle, Henry A., 5900 Market St.
Lambert, Harold W., 4862 Tacony St.
Lammer, Francis J., 2266 N. Nineteenth St.
Lamparter, Eugene, Green Lane (Montgomery Co.).
Landis, Henry R. M., 1818 S. Rittenhouse Square.
Lane, Dudley W., 2237 N. Twenty-ninth St.
Langdon, H. Maxwell, 2014 Chestnut St.
Langdon, Roy L., 529 E. Chelten Ave., Gtn.
Laplace, Ernest, 1828 S. Rittenhouse Sq.
Larer, Richard W., 1407 E. Columbia Ave.
Large, Octavius P., Twenty-ninth and Somerset Sts.

Latchford, O. Luther, 1607 N. Fifteenth St.
Lathrop, Ruth Webster, 1415 N. Seventeenth St.
Latta, Samuel W., 3602 Powelton Ave.
Lau, Scott W., N. E. Cor. Fifteenth and Ritner Sts.
Lawrance, J. Stuart, 1332 Spruce St.
Lawrence, Granville A., Medical Arts Bldg.
Laws, George M., 2033 Locust St.
Leach, Wilmon W., 2118 Spruce St.
Leaman, Enos H., 3440 N. Second St.
Leaman, William G., 3700 Baring St.
Leavitt, Frederic H., 1527 Pine St.
Lebo, D. Austin, 2317 W. Somerset St.
Le Boutillier, Theodore, 2008 Walnut St.
LeCates, Charles A., Mt. Pocono (Monroe Co.).
Le Conte, Robert G., 2000 Spruce St.
Lee, Walter Estell, 905 Pine St.
Leebron, Jacob D., 247 S. Thirteenth St.
Leedom, John, 725 W. Allegheny Ave.
Lefcoe, C. Henry, 1420 N. Thirteenth St.
LeFever, Charles W., 1708 Pine St.
Leff, Benjamin, 3074 Frankford Ave.
Leffman, Henry, 1839 N. Seventeenth St.
Legg, Albert N., 1639 W. Dauphin St.
Lehman, Frederick C., 2501 Columbia Ave.
Lehman, Joseph D., 4257 Main St., Myk.
Lehrfeld, Louis, 702 S. Sixtieth St.
Leidy, C. Fontaine Maury, 338 S. Sixteenth St.
Leidy, Joseph, 1319 Locust St.
Lenahan, Joseph P., 3306 N. Fifth St.
Lennon, James Sumner, 1608 Christian St.
Leof, Morris V., 1700 N. Franklin St.
Leonard, Charles F., 2025 S. Tenth St.
Leonard, Edward A., Jr., 1214 S. Fifty-third St.
Leopold, Raymond S., Wayne Ave. and Coulter St., Gtn.
Leopold, Samuel, 1814 Spruce St.
Leopold, Simon S., 2025 Spruce St.
Levan, Georges F., 733 N. Forty-first St.
Leevan, Georges F., 733 N. Forty-first St.
Levering, J. Walter, 1309 Oak Lane.
Levi, I. Valentine, 1736 N. Sixteenth St.
Levin, Samuel Fillmore, 619 S. Tenth St.
Levis, George E., 4523 Frankford Ave.
Levitt, Michael L., 733 Walnut St.
Levy, Abram, 906 N. Franklin St.
Levy, David W., 1122 E. Palmer St.
Levy, Jacob, 1920 S. Fifth St.
Lewis, Clarence J., 7004 Torresdale Ave.
Lewis, Daniel W., 2111 Hunting Park Ave.
Lewis, Fielding O., 261 S. Seventeenth St.
Lewis, John F., 5903 Lansdowne Ave.
Lewis, Mary R. Hadley, 32 N. Fiftieth St.
Lewis, Morris J., 1316 Locust St.
Lewis, Paul A., Henry Phipps Institute.
Lichtenwalner, Abbott B., 2435 N. Seventh St.
Liggett, Samuel J., 1234 W. Lehigh Ave.
Light, Arthur B., 3737 Locust St.
Lilly, John H., 1553 E. Berks St.
Lincoln, Clarence W., Wayne (Delaware Co.).
Lindauer, Eugene, 2018 Chestnut St.
Linton, Jay D., 130 Green Lane, Manayunk.
Lippert, Freda E., 1716 N. Eighteenth St.
Lipshutz, Benjamin, 1007 Spruce St.
Llewellyn, Thomas H., 739 N. Fortieth St.
Lloyd, James Hendrie, 4057 Spruce St.
Lockrey, Sarah H., 2045 Chestnut St.
Lodholz, Edward, 1106 S. Fifty-second St.
Loeb, Ludwig, 1421 N. Fifteenth St.
Loeb, Victor A., 1622 N. Fifteenth St.
Loewenberg, Samuel A., 1905 Spruce St.
Loftus, John Edward, 605-606 Medical Arts Bldg.
Long, Samuel C., 1632 N. Fifteenth St.
Long, William H., 116 S. Fortieth St.
Longaker, Daniel, 1806 Spruce St.
Longaker, Edwin P., 1806 Spruce St.
Longdon, Mary M. C., Oak Lane.
Longenecker, Christian B., 3416 Baring St.
Longshore, Howard K., 1506 Locust St.
Longshore, J. Bartley, 3150 N. Broad St.
Losada, Camella A., c/o Dr. Losada, Summit, N. J.
Lott, Harry Hunter, 1927 Chestnut St.
Loughery, Thomas P., 5545 Morton St., Gtn.
Loughridge, Jonathan Edwards, 6225 Greene St., Gtn.
Loux, Hiram R., Medical Arts Bldg.
Love, Julius D., 315 Pine St.
Love, Louis F., 1305 Locust St.
Lowa, Walter, 653 N. Broad St.
Lowenburg, Harry, 2011 Chestnut St.
Lownes, John B., Medical Arts Bldg.
Luburg, Leon F., 1822 Girard Ave.
Lucas, Walter S., Wynnewood (Montg. Co.).
Lucke, Baldwin, Medical Laboratories, U. of P.
Ludy, John B., 2042 Chestnut St.
Lukens, Robert M., 1308 Hunting Park Ave.
Lull, Clifford, B., Sixty-ninth and Market Sts.
Lupin, Emanuel J., 2221 N. Thirty-third St.
Lynch, Frank Bruce, Jr., 5413 Sansom St.
Lynch, John J., 4280 Paul St.
Lyon, B. B. Vincent, 2014 Walnut St.
Lytle, I. Walter, 1434 N. Fifteenth St.
McCalmont, William S., 746 N. Sixty-third St.
McCarthy, Cornelius T., 12 S. Thirty-eighth St.
McCarthy, Daniel J., 2025 Walnut St.
McCarthy, Francis X., 709 E. Chelten Ave., Germantown.
McCarthy, Patrick A., 229 E. Price St., Gtn.
McClary, Samuel III, Medical Arts Bldg.
McCloskey, Edward W., 8720 Germantown Ave.
McCloskey, John F., 8720 Germantown Ave.
McCollin, James G., 5472 Baltimore Ave.
McCombs, Robert S., 124 S. Eighteenth St.
McCombs, William, 1527 N. Thirteenth St.
McConihay, Clarence W., 227 S. Ninth St.
McConnell, James W., 1909 Chestnut St.
McCormick, John A., 1311 N. Nineteenth St.
McCrea, Lourain E., 919 Spruce St.
McCrae, Thomas, 1929 Spruce St.
McCullough, Francis J., 1009 S. Forty-seventh St.
McDaniel, Earl L., 1325 Erie Ave.
McDevitt, Charles H., 4600 Wayne Ave., Gtn.
McDougald, John Q., 1336 Lombard St.
McDowell, J. Edward, 4218 Walnut St.
McDowell, Norris S., 1409 Arch St.
McFarland, Joseph, 442 W. Stafford St., Gtn.
McGinnis, Arthur, N. E. Cor. Logan and Greene Sts., Gtn.
McGlinn, John A., 113 S. Twentieth St.
McGuigan, John I., 6018 Drexel Rd.
McIlvain, Edwin H., Sixty-sixth Ave. and Eighth St.
McIntire, Benjamin Meredith, 4833 Baltimore Ave.
McIver, Joseph, 4634 Chester Ave.
McKeage, William, 3131 N. Broad St.
McKee, James H., Medical Arts Bldg.
McKee, Jennie M., 1222 Locust St.
McKeldin, Robert A. W., 5342 Catherine St.
McKenna, John A., Lansdowne and Baltimore Aves., Lansdowne (Delaware Co.).
McKenzie, R. Tait, 2014 Pine St.
McKinley, Archibald L., 3702 N. Broad St.
McKnight, Howard A., 241 S. Thirteenth St.
McLaughlin, James S., 1502 Cayuga St.
McLean, John D., 901 N. Front St., Harrisburg (Dauphin Co.).
McLernon, John, 2636 Federal St.
McMillan, Thomas M., Jr., 2228 Locust St.
McMonagle, James W., 2120 S. Broad St.
McNerney, Aloysius F., 1806 N. Twenty-third St.
McQuaide, Florence Quindaro, 1228 Spruce St.
MacCarroll, D. Randall, 1906 Chestnut St.
MacCracken, George Y., 612 N. Thirteenth St.
MacElree, George A., 2813 N. Front St.
Macfarlan, Donald, 1805 Chestnut St.
Macfarlan, Douglas, 1805 Chestnut St.
Macfarlane, Catharine, 5808 Greene St., Gtn.
MacIntosh, William, 511 Green St.
MacKay, William H. G., 306 W. Upsal St., Gtn.

Mackel, Charles F., 728 E. Allegheny Ave.
Mackenzie, Alice V., 1831 Chestnut St.
Mackenzie, George W., 1831 Chestnut St.
Mackinney, William Humphrey, 1701 Chestnut St.
MacMurtrie, William J., 912 S. Forty-ninth St.
Macneill, Norman M., 5450 Germantown Ave.
MacSorley, Harriet E., 5634 Thomas Ave.
Magaziner, William E., 908 N. Franklin St.
Maier, Ernest G., 1323 N. Fifteenth St.
Maier, F. Hurst, 2019 Walnut St.
Major, Charles P., Tenth St. and Oak Lane.
Makler, Jacob S. P., 1308 S. Twenty-Fourth St.
Mallon, Edward A., 1606 N. Seventeenth St.
Manges, Willis F., S. E. Cor. Fifteenth and Locust Sts.
Mann, Benjamin H., 2208 S. Broad St.
Mann, Bernard, 6033 Chestnut St.
Mann, James Packard, 1234 Spring Garden St.
Mann, Victor L., White Memorial Hospital, Los Angeles, California.
Manning, Charles L., 1834 Tioga St.
Manship, Frances Petty, 1218 O St., N. W., Washington, D. C.
Mantz, Francis A., 227 N. Eighteenth St.
Margolin, Fannie B., 1304 S. Fifteenth St.
Markowitz, Morris, 1001 N. 6th St.
Marks, Jacob K., 1902 N. Twenty-second St.
Marks, Morris, 5748 Walnut St.
Marsden, Biddle R., 8811 Germantown Ave.
Marshall, Clara, 901 S. Forty-seventh St.
Marshall, George M., 1819 Spruce St.
Marter, Linnaeus E., 1631 Race St.
Martin, Collier Ford, 1831 Chestnut St.
Martin, Edward, State Department of Health, Harrisburg (Dauphin Co.).
Martin, Joseph, 2009 Columbia Ave.
Martin, William Orlando, 4268 Paul St.
Marvel, Henry V., 4839 Baltimore Ave.
Masland, Harvey C., 2130 N. Nineteenth St.
Massey, G. Betton, 1823 Wallace St.
Mathews, Abel J., Spencer St., west of Old York Rd.
Mathews, William, 728 W. Lehigh Ave.
Mayor, Charles A., 2223 S. Broad St.
Mazer, Charles, 2238 S. Broad St.
Mazor, Samuel, 451 Ritner St.
Mecluskey, John Franklin, 2622 N. Seventeenth St.
Meisle, Frederick Aaron, 150 Richmond St.
Mellor, John, 2045 Margaret St.
Melman, Ralph J., 933 N. Sixth St.
Melnick, Theodore, N. E. Cor. Sixtieth and Thompson Sts.
Menah, William M., 1831 Chestnut St.
Mencke, J. Bernhard, 1816 Spruce St.
Mendel, James H., 7238 Boyer St., Mt. Airy.
Merrill, William Jackson, 2017 Spruce St.
Merscher, Harry L., 2217 N. Broad St.
Merscher, Washington, 554 E. Washington Lane, Gtn.
Mershon, Oliver F., 2305 Christian St.
Messing, Max, 1736 S. Fifth St.
Meyerhoff, Irwin S., 1727 N. Sixteenth St.
Meyers, Milton K., 1529 S. Broad St.
Michener, Evan W., 3708 N. Broad St.
Mieldazis, Della E., 5822 Spruce St.
Miller, Aaron G., 6161 Haverford Ave.
Miller, Albert G., 2150 N. Twenty-first St.
Miller, Chas. Scott, 1218 W. Wyoming Ave.
Miller, Edwin B., 2351 E. Cumberland St.
Miller, George B., 1942 N. Broad St.
Miller, Henry J., 536 S. Fifty-second St.
Miller, Hugh McC., 1932 Spruce St.
Miller, Mary T., 313 N. Thirty-third St.
Miller, Morris Booth, 409 S. Twenty-second St.
Miller, M. Valentine, 6612 Germantown Ave.
Miller, T. Grier, 110 South Twentieth St.
Miller, W. Edward, 122 Main St., Darby (Del. Co.).
Miller, Walter M., 5100 Spruce St.
Milligan, Alice H. B., 728 Chestnut St.
Milliken, Fred H., 3716 Walnut St.
Mills, Charles K., 1909 Chestnut St.
Mills, H. Brooker, 1734 Spruce St.
Minehart, John R., 4821 Germantown Ave.
Mintzer, George S., 2416 S. Broad St.
Missett, Joseph V., S. W. Cor. Sixty-third and Race Sts.
Mitchell, A. Graeme, 1725 Pine St.
Mitchell, Charles F., 332 S. Fifteenth St.
Mitchell, Edward K., 710 W. Lehigh Ave.
Mitterling, Stephen, 5731 Baltimore Ave.
Modell, Daniel A., 1217 Lindley Ave.
Mohler, Henry K., 319 S. Sixteenth St.
Monaghan, William F., 901 N. Forty-fourth St.
Mongel, Ernest B., 1429 Tioga St.
Montgomery, Edward E., 1426 Spruce St.
Mooney, Thomas H., 2808 Wharton St.
Moore, C. Howard, 2237 W. Lehigh Ave.
Moore, Cyrus C., 2237 W. Lehigh Ave.
Moore, Edward J., 1619 Arch St.
Moore, Eugene A., 103 N. Fifty-fourth St.
Moore, John D., 1940 N. Broad St.
Moore, Joseph A., 1216 N. Sixth St.
Moore, Joseph G., 5842 Haverford Ave.
Moore, Philip H., 1225 Spruce St.
Moore, William Frederick, 255 S. Sixteenth St.
Moorhead, Stirling W., 1523 Pine St.
Moorhead, W. W., 1523 Pine St.
Morell, Charles J., 5253 Spruce St.
Morford, William B., 1534 S. Broad St.
Morgan, Arthur C., 2018 Chestnut St.
Moriarty, Charles A., 1833 Mt. Vernon St.
Morris, Casper, Jr., 2050 Locust St.
Morris, Elliston J., 128 S. Eighteenth St.
Morrison, William H., 8021 Frankford Ave., Holmesburg.
Morrow, James A., 2038 S. Fifth St.
Morton, Samuel W., 1926 Chestnut St.
Morton, George D., Honeybrook (Chester Co.).
Moss, Morris I., 869 N. Seventh St.
Moss, Samuel, 321 Pine St.
Moxey, Albert F., 47 Carpenter Lane, Mt. Airy.
Moylan, John J., 228 E. Price St., Gtn.
Moylan, Peter F., 1005 N. Sixth St.
Mudgett, John H., 2022 N. Thirteenth St.
Muellerschoen, George J., 1727 N. Fifteenth St.
Muldawer, Isaac J., 2023 S. Fourth St.
Mullen, Edward A., 221 Rochelle Ave., Manayunk.
Mullen, Oscar J., 1750 N. Park Ave.
Muller, Andrew J., 1136 N. Third St.
Müller, George P., 1930 Spruce St.
Müller, Rudolph E., 1522 S. Broad St.
Müller, William K., 6004 Greene St., Gtn.
Mulrenan, John P., 1228 S. Broad St.
Munson, Henry G., 4935 Catharine St.
Murphy, Douglas P., Woman's Hospital (110th St.), New York City.
Murphy, Edward J., 1429 W. Erie Ave.
Murphy, Eugene C., 1841 S. Broad St.
Murphy, Frank A., 3019 Richmond St.
Murphy, Henry P., 1246 N. Fifty-second St.
Murphy, John A., 313 Dickinson Ave., Swarthmore (Del. Co.).
Murray, Bernard J., 48 W. Johnson St., Gtn.
Musser, John H., Jr., 262 S. Twenty-first St.
Mutschler. Louis H., 1625 Spruce St.
Myers, Dennis Alexis, 1831 Chestnut St.
Myers, Israel, 1525 N. Eighth St.
Myers, Mae Lichtenwalner, 34 W. Pomona St., Gtn.
Myers, Tallyrand D., 1811 Walnut St.
Nassau, Charles F., 1710 Locust St.
Neal, Samuel H., 1202 Lindley Ave.
Nedurian, Vram C., 5467 Pine St.
Neel, Harry A. P., 3602 Disston St.
Neff, Joseph S., Narberth (Montg. Co.).
Neilson, Thomas R., 1937 Chestnut St.
Nelson, Wilhelmina T., County Prison, Tenth and Reed Sts.
Neubauer, Bernard B., Medical Arts Bldg.

Nevergole, John A., 132 S. Twenty-third St.
Newcomet, William S., 3501 Baring St.
Newlin, Arthur, 1804 Pine St.
Newmayer, S. Weir, 1703 Jefferson St.
Newton, Robley D., 718 N. Sixty-third St.
Nichols, William, 2044 Chestnut St.
Nicholson, William R., 2023 Spruce St.
Ninde, Frederick W., 257 High St.
Noble, Charles P., Radnor (Pa.).
Nock, Thomas O., 821 N. Twenty-fourth St.
Noter, George H., 1759 Frankford Ave.
Noll, Franklin, 1844 N. Seventeenth St.
Norris, Charles C., Chestnut and Twenty-second Sts.
Norris, George W., Dimock (Susquehanna Co.).
Norris, Richard C., 500 N. Twentieth St.
Nylan, Josef B., 1916 Rittenhouse St.
O'Boyle, Cyril P., 410 N. Fifty-second St.
O'Brien, John P., 1629 Chestnut St.
O'Brien, Matthew Cushing, 517 W. Clapier St., Gtn.
O'Brien, Thomas A., 1725 Girard Ave.
O'Connell, John A., 2128 Pine St.
O'Daniel, Andrew A., 1700 Walnut St.
O'Drain, Thomas I., 2413 N. Seventh St.
Oestreich, Henry N., 903 W. Lehigh Ave.
Off, Henry J., 115 S. Twentieth St.
O'Harrow, Marian, 414 Brown St., Iowa City, Ia.
Old, Herbert, Provident Life and Trust Co., Fourth and Chestnut Sts.
Oliensis, Abraham E., 726 Pine St.
Olsho, Sidney L., Fifteenth and Locust Sts.
O'Malley, Austin, 2228 S. Broad St.
O'Neill, Francis C., 1725 Ritner St.
O'Neill, Joseph F., 2027 Spring Garden St.
O'Reilly, Charles A., 1829 Chestnut St.
Orloff, Henry S., 1429 S. Fourth St.
Ornsteen, Abraham M., 1639 N. Franklin St.
Osmond. Anna R., 6952 Torresdale Ave., Tacony.
Osmond, Martha E., 6952 Torresdale Ave., Tacony.
Ostheimer, Alfred J., Medical Arts Bldg.
Ostheimer, Maurice. 2204 De Lancey Place.
Ott, Lambert, 1905 N. Broad St.
Ottinger, Samuel J., S. E. Cor. Master and Twelfth Sts.
Outerbridge, George W., 2039 Chestnut St.
Owen, Hubley R., 319 S. Sixteenth St.
Owen, John J., 411 Pine St.
Packard, Francis R., 302 S. Nineteenth St.
Padilla, Arturo, 6159 Elmwood Ave.
Page, Henry F., 315 S. Sixteenth St.
Pancoast, Henry K., Ardmore (Montg. Co.).
Pannell, M. Norvel, 1921 Dickinson St.
Parish, Benjamin D., 2039 Chestnut St.
Park, Frederick S., Wellington Apartments.
Parke, Joseph Richardson, 902 Spruce St.
Parke, William E., 1622 Spruce St.
Parker, Edward A., 1921 Chestnut St.
Parker, J. Sparks, 6805 Woodland Ave.
Parker, Ray, 5548 Sansom St.
Parrish, Robert C., 5301 Chester Ave.
Patten, Clarence A., 1909 Chestnut St.
Patterson, Francis D., 2103 Locust St.
Patterson, Ross Vernet, 2126 Spruce St.
Patton, Gideon Harmer, 61 E. Penn St., Gtn.
Paul, Effie M., 1530 N. Seventeenth St.
Paul, James H., 1516 Wolf St.
Paul, John Davis, 3112 N. Broad St.
Pease, Theodore N., 5800 Spruce St.
Peck, Elizabeth L., 334 S. Forty-second St.
Pelouze, Percy Starr, 1831 Chestnut St.
Peltz, Alberta, 5802 Springfield Ave.
Pemberton, Ralph, 318 S. Twenty-first St.
Penrose, Charles Bingham, 1720 Spruce St.
Penza, John G., 921 Federal St.
Peoples, John, 871 N. Twentieth St.
Pepper, O. H. Perry, Medical Arts Bldg.
Pepper, William, 1811 Spruce St.
Percival, M. Fraser, 2332 S. Broad St.
Perkins, Francis M., 320 S. Fifteenth St.
Perlman, Horace D., 1932 N. Seventh St.
Pessolano, Joseph Anthony, 1058 Madison Ave., Albany, N. Y.
Peter, Luther C., 1529 Spruce St.
Petruska, Louis, 328 Federal St.
Petty, Orlando H., 6215 Ridge Ave.
Pfahler, George E., 1321 Spruce St.
Pfeiffer, Damon B., 2028 Pine St.
Pfleuger, Henry F., 1511 N. Seventh St.
Pfromm, George W., 1431 N. Fifteenth St.
Phelps, George F., 6019 Lansdowne Ave.
Phillips, Arthur W., 3904 Walnut St.
Phillips, Horace, 4519 Chester Ave.
Phillips, James R., 1205 Cottman St.
Phillips, Richard J., 123 S. Thirty-ninth St.
Phillips, Thomas W., 144 N. Sixtieth St.
Pickett, Elizabeth Lovelace, Aldan (Del. Co.).
Piersol, George A., 4724 Chester Ave.
Piersol, George Morris, 1913 Spruce St.
Pike, Charles P., 7282 Woodland Ave.
Pilkington, Horatio, 4238 Paul St., Fkd.
Pilling, George P., Jr., 4044 Chestnut St.
Piper, Edmund B., 1936 Spruce St.
Plass, Charles F. W., Chew St. and Chelten Ave., Gtn.
Platt, Michael, 5932 Spruce St.
Pleibel, Eugene Theodore, 3733 N. Marshall St.
Podolski, Louis A., 1117 W. Lehigh Ave.
Pontius, Paul J., 1831 Chestnut St.
Posey, William Campbell, 2049 Chestnut St.
Post, Joseph W., 1204 W. Erie Ave.
Potsdamer, Joseph B., 1818 N. Broad St.
Pottberg, Charles, 2338 N. Broad St.
Potter, Ellen C., 106 State St., Harrisburg (Dauphin Co.).
Potts, Charles S., 2018 Chestnut St.
Powell, Tamlin L., 2111 Master St.
Powell, William E., 2357 E. Dauphin St.
Price, Charles E., 316 N. Fifty-second St.
Pritchard, William C., 5616 Spruce St.
Propper, Julius, 4502 Baker St., Manayunk.
Purdy, John, 722 W. Lehigh Ave.
Purnell, Caroline M., 132 S. Eighteenth St.
Quicksall, William E., 5121 Baltimore Ave.
Raby, Mahlon R., 5430 Wayne Ave.
Radcliffe, McCluney, 1906 Chestnut St.
Raftery, John, Grant Ave., Torresdale.
Rainear, A. Rusling, 2024 Diamond St.
Ramer, T. Maude, 6303 Belvidere Ave., Cleveland, Ohio.
Ramsey, William G., 1430 S. Broad St.
Ramspacker, Theodore F., 1411 E. Moyamensing Ave.
Randall, Alexander, 1310 Medical Arts Bldg.
Rankin, Charles Cooper, 2002 Chestnut St.
Ransley, Alexander W., 309 S. Sixteenth St.
Raudenbush, James S., 3633 N. Fifteenth St.
Ravdin, Isidor S., 1930 Spruce St.
Rea, Marion H., Gulph Road, Bryn Mawr (Montgomery Co.).
Real, Albert, 495 N. Fourth St.
Reckefus, Charles H., Jr., 506 N. Sixth St.
Reed, Howard, 1829 Diamond St.
Reed, Oliver K., 4005 Chestnut St.
Rees, William Thomas, 3763 N. Eighteenth St.
Reese, Warren Snyder, 230 S. Twenty-first St.
Reeves, Joseph M., 1916 Spruce St.
Reeves, Rufus S., 2127 Walnut St.
Register, Robert P., 905 Pine St.
Rehfuss, Martin E., N. E. Cor. Sixteenth and Spruce Sts.
Reiff, E. Paul, 5051 Chestnut St.
Reilly, John J., 2406 S. Twenty-first St.
Reimann, Stanley P., 516 Arbutus St.
Reimel, Clara, 1425 W. Girard Ave.
Reisert, William, 1429 Morris St.
Reiss, Abe, 918 N. Fifth St.
Reiter, David, 4025 Girard Ave.
Remig, John H., 805 S. Twelfth St.

Renninger, Abner R., The Lenox, Thirteenth and Spruce St.
Repp, John J., 926 S. Sixtieth St.
Repplier, Sidney J., Roumfort Rd., Mt. Airy.
Reynolds, Charles B., 2003 Diamond St.
Rhein, John H. W., 1732 Pine St.
Rhein, Robert D., Fifteenth and Pine Sts.
Rhoads, Edward G., 108 Queen Lane, Gtn.
Rhoads, John Neely, 1635 S. Broad St.
Ricciardi, John, 1104 Ellsworth St.
Richards, Florence H., 3708 Hamilton St.
Richards, James L., 213 S. Fiftieth St.
Richardson, Russell, 320 S. Sixteenth St.
Richey, Gladys, 5443 Angora Terrace.
Richmond, George Nelson, 4003 Chestnut St.
Ridpath, Robert F., 1928 Chestnut St.
Riegel, Walter S., 808 Cumberland St., Lebanon (Lebanon Co.).
Rieger, Charles L. W., 1304 Rockland St., Logan.
Riesman, David, 1715 Spruce St.
Righter, Harvey M., 5049 Spruce St.
Ring, G. Oram, Northeast corner Seventeenth and Walnut Sts.
Rishel, George P., 2035 Diamond St.
Riskoff, Abraham D., 1433 S. Sixth St.
Ritter, William J., 3315 N. Broad St.
Rivard, Ruth Miller, 5031 Woodland Ave.
Rivas, Damaso, Med. Dept., Univ. of Penna., Thirty-sixth and Pine Sts.
Rivhees, Aaron, 2128 S. Fourth St.
Roberts, John B., 1520 Spruce St.
Roberts, Joseph W., 1426 N. Eighteenth St.
Roberts, Mercedes A., 1142 S. Eleventh St.
Roberts, Walter, 1732 Spruce St.
Robertson, William E., 327 S. Seventeenth St.
Robinson, William D., 2012 Mt. Vernon St.
Robrecht, John J., 3940 Chestnut St.
Rochelle, Mary J., 2423 N. Seventh St.
Rodenheiser, Edwin W., 1818 S. Rittenhouse Square.
Roderer, John F., 2426 N. Sixth St.
Rodgers, George R., 2018 N. Thirteenth St.
Rodman, J. Stewart, Medical Arts Bldg.
Rogers, Asa H., 911 W. Indiana Ave.
Rommel, John C., 4601 N. Broad St.
Roper, William F., 5439 N. Fifth St.
Rosenbaum, George, Flanders Bldg.
Rosenberger, Randle C., 2330 N. Thirteenth St.
Rosenblum, Philip S., 1614 S. Twenty-third St.
Rosenfeld, Samuel, 1641 S. Fifth St.
Rosenthal, Joseph Morris, 700 E. Chelten Ave., Gtn.
Ross, George G., 1721 Spruce St.
Ross, Joseph H., 106 W. Susquehanna Ave.
Ross, Thomas C., 1701 Harrison St.
Rostow, Leo J., 1222 N. Seventh St.
Roth, David A., 3029 Diamond St.
Rothberg, Israel, 2001 N. Thirty-second St.
Rothkugel, Paul B., 2501 N. Thirty-second St.
Rothschild, Norman S., 1832 N. 17th St.
Roussel, Albert E., 2108 Pine St.
Rovno, Philip, 423 Pine St.
Rowand, Alexander H. C., 3704 Spring Garden St.
Royer, B. Franklin, Mass.-Halifax Health Commission, Halifax, N. S.
Rubenstone, Abraham I., 1208 Spruce St.
Rubin, Robert William, 2243 S. Ninth St.
Rubin, Rose S., 811 N. Seventh St.
Rubin, Samuel, 1735 S. Eighth St.
Rudolphy, Jay Besson, 1931 Chestnut St.
Ruff, Adolph, 2555 N. Eleventh St.
Ruffell, Charles E., 244 E. Girard Ave.
Rugh, J. Torrance, Medical Arts Building.
Runkle, Stuart C., 238 S. Forty-fifth St.
Ruoff, William, 610 Pennsylvania Ave., San Diego, Cal.
Rupert, Mary P. S., Medical Arts Bldg.
Rush, Eugene, 5421 Baltimore Ave.
Russell, Carlton N., 130 S. Eighteenth St.
Russell, Charles T., Jr., 2521 E. Norris St.
Rutberg, Jacob James, 621 Spruce St.
Ryan, Maria Page, 2526 S. Lambert St.
Ryan, Thomas J., 5603 Thomas Ave.
Ryan, William C., 1229 N. Eighteenth St.
Ryan, William J., 701 S. Fifty-fifth St.
Ryan, William J., 1535 Chestnut St.
Saalfrank, Charles W., Second St. Pike and Levick, Lawndale.
Sabel, Meyer, 444 S. Sixty-Second St.
Sailer, Joseph, 1718 Spruce St.
Sajous, C. E. deM., 2043 Walnut St.
Sajous, Louis T. deM., 2043 Walnut St.
Sallom, Abdullah K., 1441 S. Broad St.
Saltzman, Louis A., 1530 S. Fifth St.
Sampson, Allen G., 2834 Columbia Ave.
Sands, M. Jane, Philadelphia General Hospital, 34th and Pine Sts.
Sangree, Henry, 4031 Baltimore Ave.
Sargent, A. Alonzo, 1308 Pine St.
Sartain, Paul J., 2006 Walnut St.
Saunders, Griffin A., 2122 Fitzwater St.
Saunders, Robert Ritchie, 926 N. Fifteenth St.
Sautter, Albert C., 1421 Locust St.
Savidge, Edgar, 1924 Pine St.
Savitz, Samuel A., 1825 Tasker St.
Sawyer, William Alfred, Landing and Penfield Rds., R. F. D. No. 3, Rochester, N. Y.
Saxon, Gordon J., 1411 Walnut St.
Saylor, Edwin S., 2005 Chestnut St.
Saylor, Horace S., 6105 Jefferson St.
Scarlett, Hunter W., 230 S. Twenty-first St.
Scanlan, Leo F., 1915 Green St.
Schabinger, Charles, 4526 N. Broad St.
Schaeffer, J. Parsons, 4634 Spruce St.
Schafer, Charles S., 1745 N. Seventeenth St.
Schäffle, Karl, 3309 Macomb St., N. W., Washington, D. C.
Schaller, Abraham Lincoln, 810 S. Fifth St.
Schamberg, Jay F., 1922 Spruce St.
Schatz, Harry A., 2035 Chestnut St.
Schaubel, Charles W., 2346 E. Norris St.
Schaul, Otto D., 4920 Woodland Ave.
Scheehle, J. Evans, 312 Otis Bldg.
Schell, J. Thompson, 2102 Spruce St.
Schenberg, Joseph, 451 S. Fifty-first St.
Schenker, Hyman S., 946 N. Franklin St.
Schetky, Martha G. K., 911 S. Forty-eighth St.
Schetky, S. Elizabeth A., 18 Wellington Road, Brookline, Mass.
Schisler, Belle A., 2039 N. Twenty-ninth St.
Schlaff, Herman, 4404 Germantown Ave.
Schmidt, William H., 1532 Erie Ave.
Schnabel, Truman G., 1704 Pine St.
Schneideman, Florence M., 2045 Chestnut St.
Schneideman, Theodore B., 2045 Chestnut St.
Schneider, Charles J., 1930 N. Seventh St.
Schneyer, Julius, 935 N. Eighth St.
Schoales, Charles B., 1428 N. Eleventh St.
Schock, Harvey E., 2048 Pine St.
Scholl, Alfred K., 1115 Pennsylvania Building.
Scholl, B. Frank, 1420 N. Seventeenth St.
Schoonmaker, Irving R., 5223 Chester Ave.
Schreiber, William L., N. E. Cor. Thirteenth and Chelten Ave., Oak Lane.
Schumann, Edward A., 15 Pelham Road, Mt. Airy.
Schwartz, Bernard S., 1020 Snyder Ave.
Schwartz, George J., 1630 Walnut St.
Schwartz, Morris, 218 Ritner St.
deSchweinitz, George E., 1705 Walnut St.
Schwenk, Peter N. K., 1417 N. Broad St.
Scott, Egbert T., 5827 Haverford Ave.
Scull, William B., 3024 Richmond St.
Seabold, William F., 5617 Spruce St.
Seabrook, Alice M., 5614 Franklin Ave., Los Angeles, California.
Seelaus, Henry K., 3015 N. Broad St.
Segal, Bernhard, 1418 S. Broad St.
Segal, Louis, 704 S. Fifty-second St.
Segal, Morris, 4759 N. Eleventh St.

Seiberling, Joseph D., 339 S. Eighteenth St.
Seibert, William K., 1517 W. Erie Ave.
Seidel, Victor I., 2338 N. Twenty-ninth St.
Seifert, F. Robert, 2202 E. Cumberland St.
Seilikovitch, Solomon, 935 S. Third St.
Seipel, Russell C., 6000 Jefferson St.
Seiss, Ralph W., 255 S. Seventeenth St.
Seligman, Louis, 247 S. Thirteenth St.
Seltzer, Charles M., 2021 Spring Garden St.
Sender, Arthur C., 1311 W. Allegheny Ave.
Sener, Walter J., 1529 Spruce St.
Service, Charles A., City Ave., Bala (Montg. Co.).
Severs, G. Harvey, 3401 N. Front St.
Shaar, Camille M., 916 Spruce St.
Shaffer, George E., 3608 Richmond St.
Shaham, Simon, Snyder Ave. and Ninth St.
Shallow, Thomas A., 3942 Chestnut St.
Shammo, George C., 260 N. Fifty-second St.
Shaner, Samuel R., 209 N. Sixtieth St.
Shannon, Charles E. G., 1633 Spruce St.
Sharkey, John A., 5741 Baltimore Ave.
Shea, William K., 1705 N. Eighteenth St.
Sheaff, Philip A., 4006 Baring St.
Shemeley, William G., Jr., 1831 Chestnut St.
Shepherd, Samuel G., 2333 Wharton St.
Shields, William G., 414 Schoolhouse Lane, Gtn.
Shmookler, Henry B., 1320 S. Fifth St.
Shoemaker, Harvey, 2001 Chestnut St.
Shoemaker, Robert, 3d, Ogontz (Montgomery Co.).
Shoemaker, William T., 109 S. Twentieth St.
Sholler, George W., 1224 W. Lehigh Ave.
Shope, Edward P. L., Morristown Memorial Hospital, Morristown, N. J.
Shumway, Edward A., 2046 Chestnut St.
Shurtleff, Henry C., 31 S. Fortieth St.
Shuster, Benjamin H., 436 Spruce St.
Shute, Harry A., 1408 N. Fifteenth St.
Siegel, Alvin E., 313 S. Eighteenth St.
Siggins, John C., 1728 Spring Garden St.
Silverman, Abraham, 1511 W. Girard Ave.
Simcox, Lawrence, 2005 Chestnut St.
Simkins, James J., 2002 N. Twenty-first St.
Simsohn, Joseph S., 1501 N. Seventeenth St.
Sinclair, John F., 4103 Walnut St.
Sinexon, Justus, 3903 Chestnut St.
Singer, Samuel, 4150 Girard Ave.
Sinkler, Francis W., 1606 Walnut St.
Sinnamon, George, 2204 E. York St.
Siter, E. Hollingsworth, 1520 Locust St.
Skillern, Penn-Gaskill, Sharon Hill (Delaware Co.).
Skillern, Penn-Gaskill, Jr., 1633 Locust St.
Skillern, Ross Hall, 1928 Chestnut St.
Skillern, Samuel R., Jr., Pembroke Rd. and Bentley Ave., Cynwyd.
Skversky, Frank Benjamin, 918 Porter St.
Slade, Frederick G., 2332 N. Twenty-fifth St.
Slaughter, Charles H. P., 1630 S. Broad St.
Slaymaker, John M., 3502 Spring Garden St.
Slifer, G. Baringer, 1707 Ritner St.
Sloane, Henry O., 1737 N. Franklin St.
Slonimsky, George, 730 W. Moyamensing Ave.
Small, William B., 1321 Spruce St.
Smethurst, A. E., 2249 N. Thirteenth St.
Smiley, Anne E., 42 S. 51st St.
Smith, A. Dupont, Pelham Court, Gtn.
Smith, Clarence D., 741 Spruce St.
Smith, Frederick C., 6247 Haverford Ave.
Smith, James A., 233 S. Forty-fifth St.
Smith, J. Howard, 5804 Baltimore Ave.
Smith, J. Melvin, Fifty-second and Jefferson Sts.
Smith, Joseph I., 1721 N. Seventeenth St.
Smith, Lynnley G., 1912 Diamond St.
Smith, Morris, 2512 N. Sixth St.
Smith, Rolla L., 2987 Richmond St.
Smith, Samuel Calvin, 323 S. Eighteenth St.
Smith, S. MacCuen, 1429 Spruce St.
Smith, William A., 2141 N. Howard St.
Smock, Ledru P., 3330 Chestnut St.
Smoczynski, M. Edward, 4650 Tacony St., Frankford.
Smukler, Max E., 1909 N. Broad St.
Smyth, Calvin M., Jr., 257 S. Twenty-first St.
Smyth, Henry Field, 307 N. Wayne Ave., Wayne (Delaware Co.).
Snively, Andrew F., 323 S. Fifty-first St.
Snively, Robley D., 1709 Tioga St.
Snodgrass, Oliver E., 2350 N. Nineteenth St.
Snyder, Elizabeth, 2035 Columbia Ave.
Snyderman, Henry S., 1920 N. Seventh St.
Sohn, George W., 135 Green Lane, Myk.
Solis-Cohen, Jacob, 1833 Pine St.
Solis-Cohen, Leon, 1525 Walnut St.
Solis-Cohen, Myer, 1833 Pine St.
Solis-Cohen, Solomon, 1906 Walnut St.
Somers, Lewis S., 3554 N. Broad St.
Sommers, Raymond L., 2403 E. York St.
Sonneborn, George A., 1200 W. Erie Ave.
Spaeth, William L. C., 5000 Jackson St., Fkd.
Spangler, Ralph H., 2217 S. Broad St.
Spears, Mary M., Medical Arts Bldg.
Speese, John, 2032 Locust St.
Speer, Henry N., 727 S. Fifty-fifth St.
Spellissy, Joseph M., 317 S. Fifteenth St.
Spencer, George W., 1734 S. Fifty-eighth St.
Spencer, Sylvia D., 1830 S. Rittenhouse Sq.
Spencer, William H., 1830 S. Rittenhouse Sq.
Spiegle, Grace E., 2115 N. Twelfth St.
Spiller, William G., Twenty-first and Chestnut Sts.
Spitz, Louis, 4112 W. Girard Ave.
Spoont, Ellis M., 2445 S. Sixth St.
Sprague, Frances R., Bryn Mawr (Montg. Co.).
Sprissler, Theodore, 1151 S. Broad St.
Stahl, B. Franklin, 1727 Pine St.
Stamm, Camille J., 1412 Diamond St.
Stanton, John Joseph, 1404 N. Sixteenth St.
Starkey, Katharine M., 2018 N. Twenty-second St.
Stauffer, Nathan P., 1819 Walnut St.
Steel, William A., 3300 N. Broad St.
Steinbock, Frederick W., 136 Garfield Ave., Avon-by-the-Sea, N. J.
Steiner, Samuel, 943 N. Fifth St.
Steinfield, Edward, 4641 N. Thirteenth St.
Steinmetz, Charles G., Jr., 4426 Chestnut St.
Stellwagon, Thomas C., Jr., 1912 Pine St.
Stembler, Harry A., 939 N. Eighth St.
Stengel, Alfred, 1728 Spruce St.
Stephen, George L., Atglen (Chester Co.).
Sterling, Alexander, 2044 Chestnut St.
Stevens, Arthur A., 314 S. Sixteenth St.
Stevens, William W., 5722 Chester Ave.
Stewart, Francis E., 11 W. Phil-Ellena St., Gtn.
Stewart, Thomas S., S. E. Cor. Eighteenth and Spruce Sts.
Stiles, Charles M., 1831 Chestnut St.
Stiles, Francis A., 3801 Powelton Ave.
Stimson, Cheney M., N. E. Cor. Greene and Harvey Sts., Gtn.
Stirk, James C., 734 Yale Ave., Swarthmore (Delaware Co.).
Stirling, Samuel R., 1931 E. Cumberland St.
Stone, Edward R., 1701 Master St.
Stoner, W. H., Medical Laboratories, University of Pennsylvania.
Stout, George C., 1611 Walnut St.
Stout, Oliver, 3351 N. Fifth St.
Stout, Philip S., 4701 Chester Ave.
Strauss, Abram, Medical Arts Bldg.
Strawbridge, I. Rendall, 1418 N. Fifteenth St.
Strecker, Edward A., 4401 Market St.
Strecker, Henry A., 1318 Pine St.
Strickler, Albert, 4037 Girard Ave.
Strittmatter, Isidor P., 999 N. Sixth St.
Stroud, William D., 1011 Clinton St.
Stroup, A. Clarke, 1245 S. Twenty-third St.
Strouse, Frederic M., 1301 Spruce St.
Strousse, Jacob L., 1425 W. Erie Ave.

Stryker, Samuel S., Northeast corner Thirty-ninth and Walnut Sts.
Stubbs, Charles P., 220 W. Coulter St., Gtn.
Stuckert, Harry, 2116 N. Twenty-first St.
Stull, H. Tuttle, 2321 E. Cumberland St.
Sturr, Robert P., 1823 Spruce St.
Sturtevant, Charles N., 4321 Frankford Ave.
Suiter, David L., 218 E. Wyoming Ave.
Sulman, Louis D., 126 N. Sixtieth St.
Sutliff, Fred A., 1901 Cayuga St.
Sutton, Howard A., 114 S. Nineteenth St.
Swalm, Charles J., York and Rockland Sts.
Swalm, M. C. Edna, 4901 N. Thirteenth St.
Swalm, William Albert, 4901 N. Thirteenth St.
Swartley, William B., 5919 Greene St., Gtn.
Sweeney, Edmund B., 1721 N. Sixteenth St.
Sweet, Joshua E., 301 St. Mark's Sq.
Sweet, William M., 1205 Spruce St.
Swindalls, Walton C., 2049 Chestnut St.
Tait, Thomas W., 320 S. Fifteenth St.
Tallant, Alice W., 1200 Spruce St.
Talley, James E., 218 S. Twentieth St.
Tankersley, Grace, 1831 Chestnut St.
Target, John D., 1112 Jackson St.
Tarrant, A. Overton, Fifty-seventh and Webster Sts.
Taylor J. Madison, 1504 Pine St.
Taylor, M. Ross, 1823 Spring Garden St.
Taylor, Norman H. 8016 Seminole St., Chestnut Hill.
Taylor, Robert F., 2064 E. Cumberland St.
Taylor, William Johnson, 1825 Pine St.
Taylor, William L., 1340 N. Twelfth St.
Teller, William H., 1713 Green St.
Thissell, Henry N., 6043 Germantown Ave.
Thomas, Anne H., Medical Arts Bldg.
Thomas, Barton K., 324 High St., Pottstown (Montg. Co.).
Thomas, Benjamin A., 116 S. Nineteenth St.
Thomas, Claude L., 2802 Columbia Ave.
Thomas, Eb W., 1833 Chestnut St.
Thomas, Frank W., 27 E. Mt. Airy Ave.
Thomas, George P., 2113 N. Seventh St.
Thomas, T. Turner, 1905 Chestnut St.
Thomas, W. Hersey, Medical Arts Building.
Thompson, Frank A., 5108 Springfield Ave.
Thompson, Ross Hall, 1415 N. Sixteenth St.
Thorington, James, 2031 Chestnut St.
Thorington, J. Monroe, 2031 Chestnut St.
Thornton, E. Quin, 1331 Pine St.
Thornton, Mary Bickings, 2703 W. Somerset St.
Thorp, John S., 5901 Chester Ave.
Thrush, M. Clayton, 3705 Spring Garden St.
Thudium, William J., 1630 Walnut St.
Toland, J. Hart, 2526 S. Broad St.
Toland, Joseph J., Jr., 4605 Leiper St., Fkd.
Tomlin, Almer N., 518 N. Fortieth St.
Torrey, Robert G., 1716 Locust St.
Toulmin, Harry, S. E. Cor. Sixth and Walnut Sts.
Town, Edwin C., Box 936, Narberth (Pa.).
Tracy, Martha, 1720 Chestnut St.
Tracy, Stephen E., 1527 Spruce St.
Traganza, Frederick, 2009 N. Twenty-second St.
Trager, Herman, 5903 Walnut St.
Trasoff, Abraham, 5907 Walnut St.
Trau, Philip A., 1520 Diamond St.
Treacy, Alfred J. M., 910 E. Chelten Ave., Gtn.
Treichler-Reedy, Elsie Rau, 328 W. Manheim St., Gtn.
Trinkle, Wilmer W., 1438 N. Thirteenth St.
Trotman, James A., 1523 Christian St.
Truitt, George W., 2425 E. Clearfield St.
Tucker, Gabriel F., 301 S. Twelfth St.
Tunnell, Stephen Wilmer, 1831 Chestnut St.
Turner, Creighton H., 2504 S. Twentieth St.
Turner, John B., 1831 Chestnut St.
Turner, John H., III, 343 S. Chester Ave., Glenolden (Del. Co.).
Turner, John P., 1302 S. Eighteenth St.
Turner, Joseph, 1625 Butler St.
Turner, Linton, 450 Lyceum Ave., Rxb.
Twaddell, Thomas P. H., 4203 Chester Ave.
Tyler, Everett A., 2104 Chestnut St.
Tyson, Ralph M., 6709 N. Eighth St.
Tyson, T. Mellor, 1506 Spruce St.
Udell, William, 3011 Berks St.
Ulanski, Benjamin, 4410 Germantown Ave.
Ullom, Josephus T., 24 Carpenter St., Gtn.
Ulman, Joseph F., 2629 N. Twenty-ninth St.
Ulrich, George A., 309 S. Twelfth St.
Umsted, William M., 2812 Oxford St.
Underhill, Eugene, Jr., 1904 Chestnut St.
Vaca, T. Seydel, 727 N. Sixty-third St.
Valentine, August C., 6609 Torresdale Ave.
Van Buskirk, James, 2130 N. Hancock St.
Vance, David C., 2618 N. Eleventh St.
Van Dervoort, Charles A., 112 N. Broad St.
Van Dolson, William W., 7240 Germantown Ave.
Van Gasken, Frances C., 115 S. Twenty-second St.
Van Korb, William, 5623 Wyalusing Ave.
Van Pelt, William T., 1100 Widener Bldg.
Vansant, Eugene L., 2046 Chestnut St.
Vattier, Louis C., Otis Bldg.
Vaughn, Arthur R., 3651 N. Fifth St.
Vaughn, J. Webb, 5919 Cedar Ave.
Vitanza, Fortunato, 1216 S. Thirteenth St.
Vogt, Marnetta E., 107 S. Twenty-first St.
Voss, Frederick J., 2549 E. Indiana Ave.
Wachs, Charles S., 1941 S. Ninth St.
Wadsworth, William S., 3914 Baltimore Ave.
Wagers, Arthur J., 4638 Larchwood Ave.
Wagnetz, John A., 220 E. Allegheny Ave.
Wainwright, Maud, 5233 Walnut St.
Walker, Holmes, 5429 Lansdowne Ave.
Walker, Jacob, 712 Pine St.
Walker, John K., 1819 Delancey St.
Walker, John T., 1606 N. Eighth St.
Walker, Warren, 2042 Chestnut St.
Wallis, J. Edward, 2642 Richmond St.
Walsh, Joseph, 2026 Chestnut St.
Walsh, Maria Constantine, 902 Pine St.
Walsh, William H., 20 Fifth Ave., New York.
Waltz, Arthur D., 3601 Walnut St.
Ward. E. Tillson, 2006 Mt. Vernon St.
Warlow, Margaret A., 1831 Chestnut St.
Warmuth, Mitchell P., 1701 Chestnut St.
Warner, Miriam, 1619 S. Sixteenth St.
Watson, Arthur W., 126 S. Eighteenth St.
Watson, Charles J., 5617 N. Third St.
Watson, Edward W., 38 S. Nineteenth St.
Watson, W. Newbold, 316 S. 16th St.
Watson, Walter W., 1712 Walnut St.
Watson, William R., 1805 Pine St.
Watt, Charles C., Jr., Wayne Ave. and Hortter St., Mt. Airy.
Watt, Robert, 3142 Frankford Ave.
Weaver, Albert P., 879 Belmont Ave.
Weaver, W. Warren, 6105 Woodland Ave.
Webb, Henry P., 920 Magee St., Fox Chase.
Weber, Edith M. Clime, 5931 N. Park Ave.
Weber, Harry F., 4601 Wayne Ave.
Weber, John M., 2531 W. Columbia Ave.
Weber, Randall J., 2403 N. Seventeenth St.
Webster, Aubrey B., Medical Arts Bldg.
Weidman, Fred D., 20 Darby Road, Llanerch.
Weigle, Henry S., 1014 S. Fifty-eighth St.
Weiland, Carl, Jr., 617 Vine St.
Weinstein, George L., Foulkrod and Griscom Sts., Frankford.
Weinstein, Morris A., 615 Pine St.
Weintraub, Sarah Louise, 1239 S. Broad St.
Weisblum, Maurice, 1638 S. Broad St.
Weisenburg, Theodore H., 1909 Chestnut St.
Weiss, Benjamin P., 630 Spruce St.
Weiss, Dorothy Wilkes, 1728 Memorial Ave.
Weiss, Edward, 1906 Walnut St.
Weiss, Hervey B., 1929 N. Howard St.
Wells, J. Ralston, 114 S. Nineteenth St.
Wells, P. Fraley, 754 N. Fortieth St.

Wenner, E. Bruce, 3805 Baring St.
Wentz, Benjamin F., 6602 Woodland Ave.
Wenzel, Mary, 3711 Old York Rd.
Werner, Julius L., 1533 S. Sixth St.
Wessels, Lewis C., 1918 N. Twenty-second St.
West, Charles W., 2131 Delancey St.
West, John W., 1125 Wallace St.
West, Stanley Q., 138 W. Walnut Lane, Gtn.
Westcott, Thompson S., 1720 Pine St.
Weyl, Esther M., 757 N. Twentieth St.
Whaland, Berta, 117 Atlantic St., Bridgeton, N. J.
Wharton, Henry R., 1725 Spruce St.
Whetstone, William B., 4820 Chester Ave.
Whitaker, William, 5448 Germantown Ave.
White, Abraham E., 2123 Jefferson St.
White, Courtland Y., 6611 N. Tenth St.
White, Ellen P. Corson, 2028 Chestnut St.
White, Frank, 4331 Chestnut St.
White, Herman C., 2560 S. Sixty-Eighth St.
White, Howard K., 460 Green Lane.
White, Milton N., 701 N. Forty-second St.
Whiting, Albert D., 1523 Spruce St.
Whitlock-Rose, Elise, 2201 DeLancey St.
Widdowson, Frank R., 6201 Lansdowne Ave.
Widmann, Bernard P., 1321 Spruce St.
Wieder, Henry S., 1512 Diamond St.
Wiggins, E. Harvey, 4415 N. Uber St.
Wiggins, Susan W., 1831 Chestnut St.
Wilderman, Henry, 1318 S. Fifth St.
Wiley, Harry Eugene, 1440 S. Broad St.
Wiley, Louis R., 219 W. Tabor Rd.
Wilkinson, R. Powers, 1613 S. Broad St.
Willard, DeForest P., 1630 Spruce St.
Williams, Carl, 69 Schoolhouse Lane, Gtn.
Williams, Horace J., 5908 Greene St., Gtn.
Williams, Philip F., 262 S. Twenty-first St.
Williams, Rachel R., Eighth and Markets Sts.
Williamson, Ernest G., 1311 N. Sixtieth St.
Williamson, Katherine A., 348 S. Sixteenth St.
Willits, Charles H., Provident Life and Trust Co., Fourth and Chestnut Sts.
Willits, I. Pearson, 31 W. Walnut Lane, Gtn.
Wilmer, Harry B., 138 W. Walnut Lane, Gtn.
Wilson, George, 5000 Walnut St.
Wilson, James C., 1509 Walnut St.
Wilson, Samuel M., 1517 Arch St.
Winheld, Morris, 943 N. Fourth St.
Winkelman, Nathaniel W., 319 S. Eighteenth St.
Winter, S. Elizabeth, Brookwood Farm, Media (Delaware Co.).
Wise, Henry M., 1427 Erie Ave.
Wojczynski, Leo J., 1716 Hunting Park Ave.
Wolf, Samuel, 1814 S. Sixth St.
Wolf, Wilbert J., 3474 Frankford Ave.
Wolferth, Charles C., 1704 Pine St.
Wolfson, Louis, 1735 N. Thirty-first St.
Wollman, Cecilie H., 5907 Christian St.
Wonders, Homer F., N. W. Cor. Sixteenth and Walnut St.
Wood, Alfred C., 2035 Walnut St.
Wood, George B., 1830 Spruce St.
Wood, Horatio C., Jr., 1905 Chestnut St.
Wood, J. K. Williams, 4005 Chestnut St.
Wood, Walter A., 256 S. Sixteenth St.
Wood, William Charles, 1907 Chestnut St.
Woodbury, Frank, 3345 N. Seventeenth St.
Woodward, George, W. Willow Grove Ave., Chestnut Hill.
Woody, Samuel S., Second and Luzerne Sts.
Worden, Charles B., Medical Department, John Wanamaker, Phila.
Wray, William S., 2007 Chestnut St.
Wrigley, Arthur, 1019 Pine St.
Yaeger, Christian G., 2403 E. York St.
Yaskin, Joseph C., 1719 N. Fifty-second St.
Yawger, Nathaniel S., 1524 Chestnut St.
Yeager, George C., 1419 E. Susquehanna Ave.
Yost, George Garfield, 643 N. Sixteenth St.
Youell, George J., 730 E. Allegheny Ave.
Young, Anna Gardner, 1419 Spruce St.
Young, Charles H., 4813 Baltimore Ave.
Young, James K., 222 S. Sixteenth St.
Yubas, Morris L., 907 Pine St.
Zabarkes, R. Vera, 3228 W. York St.
Zacks, Myron A., 1900 Venango St.
Zahn, Samuel F., 6201 Chestnut St.
Zall, Bernard C., 923 N. Sixth St.
Zentmayer, William, 1506 Spruce St.
Zettlemoyer, Jonas, 5629 Whitby Ave.
Ziegler, S. Lewis, 1625 Walnut St.
Ziegler, Walter M. L., 1418 N. Seventeenth St.
Ziegler, William H., 3127 Frankford Ave.
Zimlick, Arthur J., N. W. Cor. Greene and Rittenhouse Sts., Gtn.
Zimmerman, Mason W., 1522 Locust St.
Zulick, J. Donald, 2029 Walnut St.

POTTER COUNTY SOCIETY

(Organized April 5, 1898.)

President...Elwin H. Ashcraft, Coudersport.
V. Pres.....Nathan W. Church, Ulysses.
Secretary...F. Gurney Reese, Coudersport.
Treasurer...James T. Hurd, Galeton.
Censors.....Elwin H. Ashcraft, Coudersport.
James T. Hurd, Galeton.
Henry D. Hart, Genesee.
Committee on Public Policy and Legislation:
James T. Hurd, Galeton.

Stated meetings the second Tuesday in May, July, September and November, at the Court House, Coudersport. Election of officers in July, to take office at once.

MEMBERS (14)

Ashcraft, Elwin H., Coudersport.
Church, Nathan W., Ulysses.
Colcord, A. Jackson, Port Allegany.
Farwell, Franklin P., Galeton.
Hart, Henry D., Genesee.
Hurd, James T., Galeton.
Jacobs, David E., Coudersport.
Jones, Ross H., Coudersport.
Knight, Robert B., Coudersport.
Long, Michael R., Galeton.
Page, John H., Austin.
Reese, F. Gurney, Coudersport.
Steele, John G., Galeton.
Winlack, Alexander E., Shingle House.

SCHUYLKILL COUNTY SOCIETY

(Organized 1845.)

President...John J. Dailey, McAdoo.
1st V. Pres..Merchant C. Householder, Pottsville.
2d V. Pres...George O. O. Santee, Cressona.
Sec.-Rept....Arthur B. Fleming, Tamaqua.
Treasurer...David Taggart, Frackville.
Censors.....J. Spencer Callen, Shenandoah.
Alexander L. Gillars, 5830 Girard Ave., Phila.
Christian Lenker, Schuylkill Haven.
Committee on Public Policy and Legislation:
J. Stratton Carpenter, Pottsville.
Christian Gruhler, Shenandoah.
William G. Jones, Tamaqua.
Exec. Com..Arthur B. Fleming, Tamaqua.
John J. Dailey, McAdoo.
George R. Corson, Pottsville.

Stated meetings in Pottsville (or elsewhere as may be selected) the first Tuesday of each month. Election of officers in January.

MEMBERS (112)

Auchmuty, John E., Tamaqua.
Austra, Joseph J., Shenandoah.

Bacon, Walter A., Pottsville.
Bailey, Harry W., Tamaqua.
Barnd, Franklin P., Hegins.
Barr, W. H., Ashland.
Bartho, Benjamin F., Mt. Carmel (Northumberland Co.).
Bashore, R. Guy, Minersville.
Berk, John K., Frackville.
Berkheiser, Arthur John, Shenandoah.
Biddle, Jonathan C., Fountain Springs.
Biddle, Robert M., Ashland.
Boone, George H., Pottsville.
Boord, Paul C., New Philadelphia (P. O. Silver Creek).
Bowman, Henry C., Gilberton.
Boyer, G. H., Pottsville.
Bredt, Charles E., Mahanoy City.
Bretz, Gilbert F., Pottsville.
Bronson, Albert F., Gordon.
Buckley, T. V., Girardville.
Burns, Joseph V., Coaldale.
Callen, J. Spencer, Shenandoah.
Cantlin, Frank H., Shenandoah.
Carlin, Oscar J., Pottsville.
Carpenter, J. Stratton, Pottsville.
Casey, Thomas D., Ashland.
Clay, John W., Minersville.
Conrad, John W., Port Carbon.
Constein, Rudolph A., Ashland.
Corson, George R. S., Pottsville.
Dailey, John Joseph, McAdoo.
Davis, Harry T., St. Clair.
Dechert, Harry W., Orwigsburg.
Detweiler, Aaron H., Schuylkill Haven.
Doyle, William F., Pottsville.
Espy, Carl W., Pottsville.
Fegley, Theodore C., Tremont.
Fenton, Ivor D., Mahanoy City.
Fisher, Albert W., Gordon.
Fleming, Arthur B., Tamaqua.
Gallagher, John C., Shenandoah.
Gillars, Alexander L., 5830 Girard Ave., Phila. (Phila. Co.).
Gillette, Claude W., Schuylkill Haven.
Gruhler, Christian, Shenandoah.
Heim, Lyman D., Schuylkill Haven.
Heller, James B., Pottsville.
Hensyl, George S., Mahanoy City.
Hinkel, William H., Tamaqua.
Hobbs, Harry K., Shenandoah.
Hoffman, J. Louis, Ashland.
Hogan, Charles V., 318 Market St., Pottsville.
Holderman, Herbert H., Shenandoah.
Holland, David A., Mahanoy City.
Householder, Merchant C., Pottsville.
Jones, William G., Tamaqua.
Keith, Elwin W., Minersville.
Kemner, Edgar W., Tamaqua.
Kennedy, Louis T., Pottsville.
Kingsbury, Mary B., Pottsville.
Kramer, Joseph G., Pottsville.
Lebrudig, Abraham, Shenandoah.
Lenker, Christian, Schuylkill Haven.
Lenker, Robert W., Schuylkill Haven.
Lessig, James Alfred, Schuylkill Haven.
McGeehan, Edward J., McAdoo.
McGurl, Thomas J., Minersville.
Marshall, D. Samuel, Ashland.
Matten, William H., McKeansburg.
Mengel, O. H., Frackville.
Merkel, George A., Minersville.
Miller, Charles D., Pottsville.
Moore, George H., Schuylkill Haven.
Moore, John J., Pottsville.
Morris, Joseph P., St. Clair.
Mullahey, Leo T., Shenandoah.
Murphy, Joseph T., 215 Mohantonga St., Pottsville.
O'Hará, Patrick H., Pottsville.
Price, Harvey A., Port Carbon.
Rentschler, Walter R., Ringtown.
Ressler, George W., Ashland.
Rhoads, John, Ringtown.
Riley, John D., 200 E. Mahanoy Ave., Mahanoy City.
Roberts, J. Pierce, Shenandoah.
Robinhold, Guy A., Ashland.
Robinhold, Lewis C., Auburn.
Rogers, Jerome B., Pottsville.
Roth, James P., Fountain Springs.
Roth, Victor T., Pottsville.
Rutter, Thomas C., Schuylkill Haven.
Ryan, John T., St. Clair.
Ryland, Albanus S., Pottsville.
Rynkiewicz, Ella I., Shenandoah.
Santee, George O. O., Cressona.
Scanlan, William J., Shenandoah.
Schultz, J. William, Tremont.
Seligman, Abram P., Mahanoy City.
Simonis, Arthur E., Tremont.
Spencer, Robert D., Fountain Springs.
Stein, Newton Henry, Silver Creek.
Stein, William N., Shenandoah.
Stewart, Harry H., 307 W. Market St., Pottsville.
Striegel, John G., Pottsville.
Stutzman, Raymond H., Tower City.
Sweeney, John J., Heckscherville.
Taggart, David, Frackville.
Walter, Frank J., Pine Grove.
Warne, Joseph Lloyd, Pottsville.
Weaver, Robert F., St. Clair.
Weaver, William A., Coaldale.
Weisner, Edwin E., Tamaqua.
Wertman, Samuel E., Mahanoy City.
Williams, T. Lamar, Mt. Carmel (Northumberland Co.).

SNYDER COUNTY SOCIETY

(Organized May 18, 1905.)

President...A. Jerome Herman, Middleburg.
1st V. Pres..Marand Rothrock, Mt. Pleasant Mills.
2d V. Pres...Dwight E. Long, Freeburg.
Secretary...Edwin M. Miller, Beavertown.
Treasurer...Percy E. Whiffen, McClure.
Editor & Reporter....Percival J. Herman, Selins Grove.
Censor......G. Edgar Hassinger, Middleburg.
Committee on Public Policy and Legislation:
Percy E. Whiffen, McClure.
John O. Wagner, Beaver Springs.
Official Publication: The Bulletin.
Issued Monthly.
Editor: Percival Herman, Selins Grove.

Annual meeting in January. Stated meetings at 11 a. m. (unless otherwise ordered) the first Friday of each month at Middleburg.

MEMBERS (9)

Brosius, Charles N., Shamokin Dam.
Hassinger, G. Edgar, Middleburg.
Herman, Percival, 114 Independent St., Selins Grove.
Johnston, Russell W., Selins Grove.
Miller, Edwin M., Beavertown.
Rothrock, Marand, Mt. Pleasant Mills.
Wagner, John O., Beaver Springs.
Wagner, Milton E., McClure.
Whiffen, Percy E., McClure.

SOMERSET COUNTY SOCIETY

(Organized Oct. 29, 1889.)

President...Jacob T. Bowman, Somerset.
V. Pres.....William P. Shaw, Berlin.
Sec.-Rept...H. Clay McKinley, Meyersdale.

Treasurer...Carl W. Frantz, Confluence.
Censors.....Charles B. Korns, Sipesville.
Clinton T. Saylor, Rockwood.
John H. Gardner, Stoyestown.
Committee on Public Policy and Legislation:
Mosheim W. Kuhlman, Jenners.
Charles P. Large, Meyersdale.
J. Earl Dull, Somerset.
Official Publication: The Call.
Issued Semi-monthly.
Editor: H. Clay McKinley.

Stated meetings at place selected on the third Tuesday of January, March, May, July, September and November. Election of officers in November and offices assumed at January meeting.

MEMBERS (44)

Berkheimer, George C., Windber.
Bittner, Charles K., Hooversville.
Bowman, Jacob T., Somerset.
Dull, J. Earl, Somerset.
Frantz, Carl W., Confluence.
Gardner, John H., Stoyestown.
Glass, Creed C., Meyersdale.
Grazier, George C., Hollsopple.
Heffley, Robert, Berlin.
Heikes, Lloyd A., Boswell.
Hemminger, Charles J., Rockwood.
Hemminger, J. Ross, Somerset.
Hertzler, Henry, Jenners.
James, Jerry M., Hooversville.
Keim, Albert F., Stoyestown.
Keim, William W., Jerome.
Kimmel, Henry S., Somerset.
Korns, Charles B., Sipesville.
Kuhlman, Mosheim W., Jenners.
Large, Charles P., Meyersdale.
Lichty, Bruce, Meyersdale.
Long, Benjamin H., Boswell, R. D. 2.
Lyon, Samuel E., New Central City.
McClellan, W. Roy, Garrett.
McIntyre, Milton U., Boswell.
McKinley, H. Clay, 203 Salisbury St., Meyersdale.
Marsden, Henry Irving, Somerset.
Masters, George B., Macdonaldton.
Meyers, Herbert P., Confluence.
Miller, Irwin C., Berlin.
Pollard, Richard T., Garrett.
Rowe, William T., Meyersdale.
Sass, Frank, Boswell.
Saylor, Clinton T., Rockwood.
Shaffer, Charles I., Ralphton.
Shaffer, Fred B., Somerset.
Shaw, William P., Berlin.
Smith, Bart J., Windber.
Speicher, George F., Rockwood.
Swank, Peter L., Elk Lick.
Uphouse, Albert M., Somerset.
Wenzel, John W., Meyersdale.
Wilson, Henry, Somerset.
Zimmerman, Henry A., Hollsopple.

SULLIVAN COUNTY SOCIETY

(Organized Aug. 9, 1907.)

President...Martin E. Herrmann, Dushore.
1st V. Pres..Philip G. Biddle, Dushore.
2d V. Pres...George C. Swope, Mildred.
Treasurer...Justin L. Christian, Lopez.
Secretary...Carl M. Bradford, Canton.
Censor......Philip G. Biddle, Dushore.
Reporter....Carl M. Bradford, Canton.
Committee on Public Policy and Legislation:
Martin E. Herrmann, Dushore.
Justin L. Christian, Lopez.
Philip G. Biddle, Dushore.

Meetings shall be held quarterly, the January meeting to be held at Dushore, the other meetings at time and place to be fixed by vote of the society or by the Program Committee.

MEMBERS (8)

Biddle, Philip G., Dushore.
Bradford, Carl M., Canton (Bradford Co.).
Christian, Justin L., Lopez.
Davis, Hugh K., Sonestown.
Herrmann, Martin E., Dushore.
Randall, William H., Avis (Clinton Co.)
Swope, George C., Mildred.
Wright, Theodore, Los Angeles, California.

SUSQUEHANNA COUNTY SOCIETY

(Organized Nov. 19, 1838.)

President...Abram E. Snyder, New Milford.
V. Pres.....Dever J. Peck, Susquehanna.
Sec.-Treas..Edward R. Gardner, Montrose.
Reporter....Horace D. Washburn, Susquehanna.
Censors.....Warren W. Preston, Montrose.
Fred S. Birchard, Montrose.
Arthur J. Denman, Susquehanna.
Committee on Public Health and Legislation:
Edward R. Gardner, Montrose.
Dever J. Peck, Susquehanna.

Annual meeting in Montrose the second Tuesday of January. Other meetings, morning and afternoon sessions, second Tuesday of May, August and October at places designated at previous meeting.

MEMBERS (17)

Birchard, Fred S., Montrose.
Blair, A. Stryker, Hallstead.
Caterson, Clarington W., Montrose.
Condon, William J., Susquehanna.
Denman, Arthur J., Susquehanna.
Fry, Harvey M., Rush.
Gardner, Edward R., Montrose.
Johnson, Charles A., Harford.
Lathrop, Homer B., Springville.
Peck, Dever J., Susquehanna.
Preston, Warren W., Montrose.
Snyder, Abram E., New Milford.
Taylor, Arthur J., Hopbottom.
Trimmer, Harry W., South Gibson.
Vanness, Clarence N., Hallstead.
Washburn, Horace D., Susquehanna.
Williams, T. Oliver, Tunkhannock (Wyoming Co.).

TIOGA COUNTY SOCIETY

(Organized 1861. Reorganized Jan. 24, 1896.)

President...Lloyd G. Cole, Blossburg.
V. Pres.....Fay X. Field, Wellsboro.
Sec.-Treas...Solomon P. Hakes, Tioga.
Reporter....John H. Doane, Mansfield.
Exec. Com...Lloyd G. Cole, Blossburg.
Solomon P. Hakes, Tioga.
Henry C. Harkness, Mansfield.
Censors.....Farnham H. Shaw, Wellsboro.
Charles R. Smith, Tioga.
William C. Wilson, Morris Run.
Committee on Public Policy and Legislation:
John C. Secor, Westfield.
Clarence C. Gentry, Knoxville.
Hiram Z. Frisbie, Elkland.

Stated meetings the first Friday of each month at places selected. Election of officers in January.

MEMBERS (29)

Clark, Edwin E., Knoxville.
Cole, Lloyd Gamble, Blossburg.
Davies, John R., Blossburg.
Ditchburn, David T., Arnot.

Doane, John H., Mansfield.
Farwell, Howard M., Westfield.
Field, Fay X., Wellsboro.
Frisbie, Hiram Z., Elkland.
Gentry, Clarence C., Knoxville.
Gentry, John M., Wellsboro.
Hakes, Solomon P., Tioga.
Harkness, Henry C., Mansfield.
Howland, Harry W., Gaines.
Kennedy, Foster H., Middlebury Center.
Kiley, John H., Morris Run.
Kingsley, Harry O., Gillett (Brad. Co.).
Longwell, John P., Wellsboro.
Mastin, Nathan W., Wellsboro.
Meaker, Hughes G., Tioga.
Nye, Orrin S., Rutland.
Patterson, David A., Westfield.
Secor, John C., Westfield.
Shaw, Farnham H., Wellsboro.
Sheldon. Charles W., Wellsboro.
Smith, Charles R., Tioga.
Smith, L. Chapman, Lawrenceville.
Webb, Clarence W., Wellsboro.
Webster, Jesse G., Wellsboro.
Wheeler, Edith Flower, Mansfield.

UNION COUNTY SOCIETY

(Organized July 27, 1904.)

President...Amos V. Persing, Allenwood.
1st V. Pres..Weber L. Gerhart, Lewisburg.
2d V. Pres...Charles H. Dimm, Mifflinburg.
Sec.-Treas..Charles A. Gundy, Lewisburg.
Reporter....Oliver W. H. Glover, Laurelton.
Censor......Charles H. Dimm, Mifflinburg.
Committee on Public Policy and Legislation:
Harry R. Thornton, Lewisburg.
Oliver W. H. Glover, Laurelton.
Charles H. Dimm, Mifflinburg.

Stated meetings in either Bucknell Hall or Bucknell Laboratory, Lewisburg, the third Thursday of April, July, October and December. Election of officers in July.

MEMBERS (17)

Bikle, Paul H., Mifflinburg.
Dimm, Charles H., Mifflinburg.
Focht, Martin Luther, Lewisburg.
Gerhart, Weber L., Lewisburg.
Glover, Oliver W. H., Laurelton.
Gundy, Charles A., Lewisburg.
Hill, Albert Harrison, Mifflinburg.
Leiser, William, Jr., Lewisburg.
Matzke, Edith, University of Missouri, Columbia, Mo.
Metzgar, William E., Allenwood, R. D. 2.
Persing, Amos V., Allenwood.
Sampsell, David M., Winfield.
Shields, Edgar T., 33 Cleveland Ave., New Rochelle, N. Y.
Steans, Ralph, Lewisburg.
Thornton, Harry R., Lewisburg.
Wolfe, Lewis E., New Berlin.
Wolfe, Mary M., Laurelton.

VENANGO COUNTY SOCIETY

(Organized May 8, 1867.)

President...Rose M. Dunn, Franklin.
V. Pres.....M. Ada McKee, Oil City.
Sec.-Treas...John F. Davis, Oil City.
Censors.....Jacob P. Strayer, Oil City.
Elmer L. Dickey, Oil City.
Frederick W. Brown, Oil City.
Committee on Public Policy and Legislation:
Harry F. McDowell, Franklin.
Official Publication: The Bulletin of the Venango County Medical Society.
Issued Bi-Monthly.
Editors: Rose M. Dunn, Franklin.
John F. Davis, Oil City.
Fred W. Brown, Franklin.

Stated meetings on the third Tuesday of January, March, May, July, September and November at 1 p. m., in Franklin or Oil City. Two meetings each year are "outings" and are held at Monarch Park and the State Institution for Feebleminded. Election of officers in January.

MEMBERS (55)

Ashton, Charles H., Franklin.
Black, Burton A., Polk.
Bolton, Earle W., Oil City.
Bovard, Forrest J., Tionesta (Forest Co.).
Boyd, Irwin H., Oil City.
Bridenbaugh, Charles S., Emlenton.
Brown, Alexander M., Franklin.
Brown, Frederick W., Franklin.
Bruner, Paul, Oil City.
Cooper, Clifford, Titusville (Crawford Co.).
Crawford, John K., Cooperstown.
Cunningham, Paul R., 1026 Liberty St., Franklin.
Davis, John F., Box 28, Oil City.
Detar, Carm Y., Oil City.
Dickey, Elmer L., Oil City.
Dille, George W., Cooperstown.
Dunn, Rose M., Franklin.
Gaynor, Henry B., Polk.
Hadley, John L., Oil City.
Hammond, Henry P., Franklin.
Henderson, Earl F., Clintonville.
Irwin, Thomas A., Franklin.
Jackson, Frank B., Oil City.
Jobson, George B., Franklin.
Jobson, William R., Oil City.
Lamb, Harry H., Oil City.
Livingston, Walter R., Polk.
McBride, Lewis E., Franklin.
McDowell, Harry F., Franklin.
McDowell, Samuel W., Pittsville.
McKee, M. Ada, Oil City.
McLain, Paul J., Oil City.
Magee, F. Earle, Oil City.
Mount, Winnie K., Oil City.
Murdoch, J. Moorhead, Polk.
Nicholson, William Addison, Franklin.
Perrine, Jonathan B. Wesley.
Ricketts, Audley W., Oil City.
Robb, Mayo, Seneca.
Roth, William R., c/o P. R. R. Med. Examiner, 413 Market St., Harrisburg (Dauphin Co.).
Serrill, W. W., Kellettville (Forest Co.).
Sharp, James R., Oil City.
Sharpnack, William F., Oil City.
Siggins, James B., Oil City.
Slater, Sidney A., Worthington, Minn.
Snyder, Charles P., Manor (Westmoreland Co.).
Spencer, Elwood P., Cooperstown.
Strayer, Jacob P., Oil City.
Summerville, Ford M., Odd Fellows Temple, Oil City.
Thompson, Ardus C., Franklin.
Thompson, Edgar V., Franklin.
Waid, John M., Titusville (Crawford Co.).
Wilkins, John C., Oil City.
Wilson, Calvin M., Franklin.
Zerbe, J. Irwin, Franklin.

WARREN COUNTY SOCIETY

(Organized 1871. Reorganized Sept. 19, 1881.)

(Warren is the post office when street address only is given.)

President...Willis M. Baker, 205 Third Ave.
1st V. Pres..Ralph H. Knapp, Youngsville.
2d V. Pres...Irving G. Hyer, Clarendon.

Sec.-Treas..Elizabeth S. Beaty, 100 East St.
Cor. Sec. &
Reporter....Michael V. Ball, 214 Pennsylvania Avenue, W.
Censors.....Paul B. Stewart, 211½ Market St.
Christian J. Frantz, 128 Pennsylvania Avenue, W.
Roy L. Young, 306 Third Ave.
Committee on Public Health Legislation:
Harry W. Mitchell, State Hospital, Warren.
Michael V. Ball, 214 Penna. Ave., W.
William M. Robertson, 418 Third Ave.

Stated meetings the third Monday of each month. Election of officers in January.

MEMBERS (48)

Africa, Edwin S., 304 Liberty St.
Baker, Willis M., 205 Third Ave.
Ball, Michael V., 214 Penna. Ave. W.
Beaty, Elizabeth S., 100 East St.
Bennett, George Everett, 25½ N. Center St., Corry (Erie Co.).
Bradshaw, George M. B., Sugar Grove.
Brewster, Benjamin F., Tidioute.
Briggs, Erwin S., 32 Water St.
Brown, Otis S., 6 Pennsylvania Ave. W.
Chapman, LeRoy E., 1911 Pennsylvania Ave., E.
Clancy, William Patrick, 316 Second Ave.
Condit, George S., Warren.
Cowden, Ernest J., North Warren.
Darling, Ira A., State Hospital for Insane.
Durham, James R., 104 Market St.
Ellsworth, Adelaide, State Hospital for Insane.
Flatt, Anna H. S., Corydon.
Flatt, Clayton C., Kinzua.
Frantz, Christian J., 128 Pennsylvania Ave. W.
Haines, Franklin G., 203 Third Ave.
Hamilton, Edwin G., 100 Market St.
Hamilton, John W., 106 Pennsylvania Ave. W.
Hyer, Irving G., Clarendon.
Kelley, Ernest J., Chandlers Valley.
Kibler, Charles B., Corry (Erie Co.).
Knapp, Ralph, Youngsville.
McKee, Edwin D., 220 Liberty St.
MacDonald, Alden B., 220 Liberty St.
Mervine, Robert B., Sheffield.
Mitchell, Harry W., State Hospital for Insane.
Mitchell Mary P., State Hospital for Insane.
Noeson, Frank T., Bear Lake.
Paige, Laverne D., Spring Creek.
Phillips, Hubert J., Bear Lake.
Pryor, George T., Sheffield.
Robertson, William M., 418 Third Ave.
Russell, Hiram B., Sheffield.
Russell, John C., 207 Pennsylvania Ave. E.
Schmehl, Charles W., Warren Nat. Bank Bldg.
Schuler, Floyd G., 201 Third St.
Shorkley, Thornton M., Tidioute.
Shortt, William H., Youngsville.
Smith, Monroe T., 507 Pennsylvania Ave. E.
Stewart, Paul B., 211½ Market St.
Stewart, Richard B., 214 Liberty St.
VerMilyea, Charles H., Russell.
Weston, Paul G., State Hospital for Insane.
Young, Roy L., 306 Third Ave., Warren.

WASHINGTON COUNTY SOCIETY

(Organized May 19, 1855.)

President...Edgar M. Hazlett, Washington.
V. Pres.....Alexander N. Booth, Bentleyville.
Sec.-Treas...Charles C. Cracraft, Claysville.
Censors.....Robert E. Connor, Hickory.
John N. Sprowls, Claysville.
Boyd A. Emery, R. D. No. 1, Eighty-four.
Reporter....Charles C. Cracraft, Claysville.
Librarian....Richard A. Stewart, Washington.
Committee on Public Policy and Legislation:
William D. Martin, Dunn's Station, R. D. 2.
John B. McMurray, Washington.
Joseph W. Hunter, Charleroi.
Exec. Com..Edgar M. Hazlett, Washington.
James H. Corwin, Washington.
Charles C. Cracraft, Claysville.
Official Publication: The Program.
Issued Monthly.
Editor: Charles C. Cracraft, Claysville.

Stated meetings in rooms in New Armory Building, Washington, second Tuesday of each month except July and August, at 2 p. m.

MEMBERS (122)

Alexander, William H., Canonsburg.
Bailey, Harry F., Monongahela.
Beveridge, David, Washington.
Booth, Alexander Nelson, Bentleyville.
Botkin, William Lester, Cokeburg.
Boyer, Samuel P., Finleyville.
Braden, LeRoy W., Ten Mile.
Burns, William James, 111 W. Chestnut St., Washington.
Cary, John Herschel, Prosperity.
Clark, Roy S., 141 W. Chestnut St., Washington.
Cobb, F. Floyd, Marianna.
Conger, George R., Taylorstown.
Connor, Robert Evert, Hickory.
Corwin, James H., Washington.
Cracraft, Charles Clinton, Claysville.
Cummings, Ralph E., Bentleyville.
Dague, Samuel N., Houston.
Davis, Alden O., Charleroi.
Day, Minor H., Donora.
Dickson, William R., McDonald.
Dodd, Cephas T., Washington, R. D. 6.
Donahoo, J. Frank, Washington.
Donaldson, Arthur Van E., Canonsburg.
Dunkle, Gaily Barr, Washington.
Edwards, David Henry, Washington.
Ellis, Edwin M., Ellsworth.
Emery, Boyd Alfred, Eighty-four, R. D. 1.
Enos, J. Clive, Charleroi.
Faddis, Thomas M. C., Charleroi.
Farquhar, John W., California.
Ferman, John W., Charleroi Bank Bldg., Charleroi.
Frantz, George B., Coal Center.
Gemmill, Walter D., Morganza.
Gormley, J. A., Canonsburg.
Graves, Charles T., Donora.
Haines, Dempsey D., Allenport.
Hanlon, Torrance J., Monongahela.
Harsha, Charles Lloyd, Canonsburg.
Hays, George K., Monongahela.
Hazlett, Edgar Marion, Washington.
Hazlett, Esten L., c/o W. W. Thompson, Avella.
Hill, H. Hugh, 517 Fallowfield Ave., Charleroi.
Hindman, Audley O., Burgettstown.
Honesty, Leonard C., Washington.
Hook, John S., Bentleyville.
Hoon, LeRoy W., Monongahela.
Hunter, Joseph William, Charleroi.
Huston, Samuel W., Denbo.
Ildza, John W., Canonsburg.
Johnson, Elbin J., Claysville.
Johnston, John Alton, Canonsburg.
Keck, William F., Avella.
Kelso, John C., Canonsburg.
Kirchner, Louis F., Washington.
Knox, Frank L., Claysville.
Knox, John C., Washington.
Knox, Robert A., 104 W. Wheeling St., Washington.

Lacock, Horace Mortimer, West Finley.
Lamp, Clyde B., Courtney.
LaRoss, William A., McDonald.
Lewis, Orville Garrett, 315 E. Wheeling St., Washington.
Lewis, William H., Donora.
Linn, Charles Francis, Monongahela.
Livingston, Walter R., Polk (Venango Co.).
Lutz, Loyal G., Roscoe.
Lynch, Harry Pierce, 140 Main St., Monongahela.
McCarrell, David Leander, Hickory.
McCullough, Thomas L., Midway.
McCullough, Wm. John L., Slater Bldg., Washington.
McDonough, Oscar T., Washington.
McKay, Edwin M., Charleroi.
McKee, George L., Burgettstown.
McKennan, James Wilson, Washington.
McKittrick, Ora F., Eldersville.
McMurray, John Boyd, Washington.
McNinch, James R., West Alexander.
MacKay, William H., Slovan.
Manning, Milton F., Beallsville.
Martin, William Clayton, California.
Martin, William Douglass, Dunn's Station, R. D. 2.
Maxwell, John Ralph, Washington.
Murphy, George H., Monongahela
Parry, Roger Sammons, 401 Washington Trust Bldg., Washington.
Patterson, Frank Iams, 188 Duncan Ave., Washington.
Patterson, Guy Egbert, Washington.
Patterson, John A., Washington.
Perkins, G. Alden, Burgettstown.
Prowitt, Homer Persell, Washington.
Ramsey, George W., Washington Trust Bldg., Washington.
Repman, Harry Joseph, Charleroi.
Reuben, Samuel A., Washington.
Reynolds, John M. C., Washington.
Runion, A. LaGrand, Canonsburg.
Sargent, Larry Dodd, 6 S. Main St., Washington.
Schmid, Walter W., Charleroi.
Scott, Stanley L., Roscoe.
Scott, William L., Joffre.
Shannon, James H., Washington.
Sickman, Albert S., Lock No. 4.
Snodgrass, Henry Lane, Buffalo.
Spahr, Robert A., West Brownsville.
Sprowls, Jesse Addison, Donora.
Sprowls, John Nelson, Claysville.
Sprowls, William W., Houston.
Stahlman, Frederick C., Charleroi.
Stewart, Richard A., 26 E. Maiden St., Washington.
Stewart, Robert S., Washington.
Stewart, R. Vance, Monongahela.
Stunkard, Harry, Avella.
Swan, George, McDonald.
Teagarden, William David, Washington.
Thompson, Albert Ely, Washington.
Tibbons, Clyde E., Washington Trust Bldg., Washington.
Underwood, Frank H., Monongahela.
Vieslet, Victor P., Charleroi.
Wall, Porter M., Monongahela.
Weirich, Collin Reed, Washington.
Wilson, James E., Canonsburg.
Wilson, Thomas Dent Mutter, Washington.
Wolfe, Russell Wilson, Taylorstown.
Wood, Charles Bennett, Monongahela.
Woods, George Brown, Washington Trust Bldg., Washington.

WAYNE COUNTY SOCIETY

(Organized May 25, 1905.)

President...William T. McConvill, Honesdale.
1st V. Pres..Frederick A. Lobb, Hawley.
2d V. Pres...Pierson B. Peterson, Honesdale.
Sec.-Treas. &
Reporter....Edward O. Bang, S. Canaan.
Censors.....Harry B. Ely, Honesdale.
Arno C. Voight, Hawley.
William H. Tassell, White Mills.
Committee on Public Policy and Legislation:
Fred W. Powell, Honesdale.
Edward W. Burns, Honesdale.

Stated meetings held the third Thursday of May July, October and December at location decided on a previous meeting. Annual meeting in December.

MEMBERS (25)

Bang, Edward Otto, South Canaan.
Bang, Sarah Allen, South Canaan.
Bennett, John E., Starrucca.
Berlin, Allen A., Newfoundland.
Burns, Edward Ward, Honesdale.
Catterall, Alfred H., Hawley.
Cook, Alexander Marshall, South Canaan.
Corson, Charles G., Honesdale, R. D. 5.
Ely, Harry B., Honesdale.
Frisbie, Frank C., Equinunk.
Gavitte, Edward B., New Enterprise (Bedford Co.)
Lobb, Frederick A., Hawley.
McClellan, Henry Joseph, Callicoon, Sullivan Co., N. Y
McConvill, William T., Honesdale.
Merriman, George C., Lake Como.
Miller, Edwin S., Pleasant Mount.
Nielsen, Louis B., Honesdale.
Noble, Homer C., Waymart.
Peterson, Pierson B., Honesdale.
Powell, Fred W., Honesdale.
Rodman, George T., Hawley.
Simons, Arthur J., Newfoundland.
Smith, Frank I., Shohola (Pike Co.)
Tassell, William H., White Mills.
Voight, Arno C., Hawley.
White, Harry Cummings, Ariel.

WESTMORELAND COUNTY SOCIETY

(Organized Nov. 15, 1859.)

President...Frank C. Katherman, Whitney.
V. Pres.....Howard W. Day, Monessen.
Sec.-Treas..Myers W. Horner, Mount Pleasant.
Reporter....Wilder J. Walker, Greensburg.
Censors.....R. E. Lee McCormick, Irwin.
Charles D. Ambrose, Ligonier.
Charles C. Crouse, Greensburg.
Committee on Public Health Legislation:
Charles E. Taylor, Irwin.
James P. Strickler, Scottdale.
Urban H. Reidt, Jeannette.
Exec. Com..Frank C. Katherman, Whitney.
D. Ray Murdock, Greensburg.
Myers W. Horner, Mount Pleasant.
Official Publication: Bulletin.
Issued Monthly.
Editor: Myers W. Horner, Mount Pleasant.

There shall be twelve meetings of the society, one each month. All will be held in Greensburg, in City Hall, at 8 p. m., on the first Tuesday.

MEMBERS (150)

Abbaticchio, Nicholas, Latrobe.
Alexander, Ray M., Bolivar.
Ambrose, Charles D., Ligonier.
Anderson, John S., Greensburg.
Ankney, Edward G., Pleasant Unity.
Aspey, Lewis S., Smithton.
Bailey, Jean C., Greensburg.
Bailey, Louis J. C., Greensburg.
Baldwin, Clifford C., Forbes Road.
Barclay, Hugh Baily, Greensburg.
Barkley, John W., Ligonier.

Bell, Winfield S., Youngstown.
Blackburn, Arthur B., Latrobe.
Blackburn, Ida E., Greensburg.
Boale, John A., Vandergrift Heights.
Bortz, Walter M., Greensburg.
Bowman, George, Irwin.
Brisbine, John C., Cope Bldg., Greensburg.
Brown, Walter H., Youngwood.
Burkholder, John Lewis, 401 E. Washington St., Mount Pleasant.
Byers, W. Craig, Webster.
Caldwell, John D., Irwin.
Carnahan, William J., 202 Washington St., Vandergrift.
Caven, Alva H., Youngwood.
Clifford, Edward M., Greensburg.
Cochran, Albert M., Salina.
Cole, Thomas P., Greensburg.
Copeland, William A., Vandergrift.
Crawford, John S., Greensburg.
Crouse, Charles C., Greensburg.
Croushore, Charles C., Greensburg.
D'Alessio, Joseph, Monessen.
Day, Howard W., Monessen.
Dickson, George M., Adamsburg.
Doncaster, W. Trall, Fourth and Bullit Aves., Jeannette.
Dunlap, Effie Belle, Ligonier.
Earnest, Simon Peter, Delmont.
Easter, Daniel M., c/o Medical Dept., P. R. R., So. Brownsville (Fayette Co.).
Eiseman, Paul C., Latrobe.
Emerson, Howard B., Yukon.
Fairing, John Walker, Greensburg.
Farquhar, David Clifford, Monessen.
Ferguson, Rutherford Hayes, Box 546, West Newton.
Fetter, William H., Scottdale.
Fichthorn, Lewis L., Avonmore.
Gemmill, William P., Monessen.
Gilbert, Earl B., Scottdale.
Gilbert, Levi T., Scottdale.
Goble, Charles A., 413 Clay Ave., Jeannette.
Gray, Samuel Brown, Scottdale.
Greaves, John D., New Alexandria.
Griffith, Martin E., Monessen.
Hamman, Howard H., Greensburg.
Haughwout, Bert, Derry.
Haymaker, William J., Export.
Highberger, Harry L., Herminie.
Horner, Myers Worman, Mount Pleasant.
Hunter, William D., Monessen.
Hutton, David S., Smithton.
Israel, Isaac Joseph, Monessen.
Jack, James Renwick, New Alexandria.
Johnson, J. Barton, Ligonier.
Jordan, David C., Derry.
Katherman, Frank C., Whitney.
Kepple, Adam S., Hannastown.
Kerr, Norman L., Scottdale.
Kimmel, Harry F., Derry.
Klingensmith, Thomas A., Jeannette.
Koegel, William F. H., Monessen.
Krebs, A. Bryan, Bolivar.
Kreger, Oliver J., Monessen.
Lawhead, James H., West Newton.
Leatherman, Daniel I., 215 Pennsylvania Ave., Greensburg.
Leatherman, Kate W., Greensburg.
Lemmon, James Quinn, Latrobe.
McClellan, Robert P., Jr., Irwin.
McCormick, R. E. Lee, Irwin.
McDowell, William J., Scottdale.
McKee, Claude W., Greensburg.
McKinniss, Clyde R., Torrance P. O.
McMurray, H. Albert, Youngwood.
McNish, George T., 13 College Ave.. Mount Pleasant.
Mason, John C., Rillton.
Marsh, Florence L., Mount Pleasant
Marsh, William A., Mount Pleasant.
Mather, Homer R., Latrobe.
Megahan, Alvin Ray, Latrobe.
Miller, George W., Greensburg.
Miller, Wesley W., Jeannette.
Montgomery, Mary L., Mount Pleasant.
Moran, Thomas W., Latrobe.
Murdock, Dennis Ray, Greensburg.
Nealon, Stephen W., Latrobe.
Newill, Domer S., Donegal.
Nolan, Thomas F., Greensburg.
Nolan, William P., Greensburg.
Ober, Bert Frank, Latrobe.
Ober, Irwin J., Greensburg.
Painter, Theodore P., United.
Patton, James M., 147 Jefferson Ave., Vandergrift.
Peairs, William F., Sutersville.
Pierce, Carl F., Greensburg.
Pile, Phillip S., Latrobe.
Piper, Ellsmer Landis, Export.
Pogue, Frank Milton, Trafford.
Portzer, Iden M., Greensburg.
Potts, William Joseph, Greensburg.
Prothero, Harold Ney, Jeannette.
Reese, Leroy J., Bolivar.
Reidt, Urban H., Jeannette.
Ringer, Joseph H., Jeannette.
Robinson, John Q., Jr., West Newton.
Rugh, Carrol Bancroft, New Alexandria.
Rupert, David A., Webster.
St. Clair, Thomas, Latrobe.
Sankey, Lee Monte, Jeannette.
Seaton, Charles F., Crab Tree.
Shirey, Charles A., Manor.
Silliman, James W., Bradenville.
Silsley, Nathaniel Eldridge, Scottdale.
Singer, John J., Greensburg.
Skelley, Charles J., Irwin.
Skirpan, John M., Monessen.
Sloan, Charles M., Madison.
Sloterbeck, Edgar B., Monessen.
Smith, L. B. Raymond, Jeannette.
Smithgall, Melvin H., Export.
Snyder, Charles E., Greensburg.
Snyder, Oscar B., Greensburg.
Sowash, Joseph L., Irwin.
Speer, Ross H., Vandergrift.
Stahlman, Joseph C., Vandergrift.
Stauffer, Harry J., Jeannette.
Stockberger, Harry J., Slickville.
Strickler, Albert W., Scottdale.
Strickler, James P., Scottdale.
Taylor, Charles E., Irwin.
Taylor, William H., Irwin.
Tittle, Harry W., New Florence.
Trimble, James F., Greensburg.
Waide, Arthur A., Scottdale.
Walker, D. Allison, Southwest.
Walker, Wilder J., Greensburg.
Watkins, Benjamin M., New Derry.
Watson, Joseph H., Jeannette.
Wilson, Arthur R., Monessen.
Wilson, Louis F., 215½ S. Main St., Greensburg.
Wilson, Robert L., Jeannette.
Wright, Samuel S., Pleasant Unity.
Wynn, Charles A., Greensburg.

WYOMING COUNTY SOCIETY

(Organized Aug. 11, 1903.)

President...Van C. Decker, Nicholson.
V. Pres.....George M. Harrison, Meshoppen.
Sec.-Treas...Herbert L. McKown, Tunkhannock.
Censors.....William W. Lazarus, Tunkhannock.
William B. Beaumont, Laceyville.

Committee on Public Policy and Legislation:
George M. Kinner, North Mehoopany.
George H. Rauch, Noxen.

Annual meeting in Tunkhannock on the second Wednesday in January. Other meetings, not less than two, to be held as determined by vote of the society.

MEMBERS (12)

Austin, Frank J., Laceyville.
Beaumont, William B., Laceyville.
Boston, Clarence L., Noxen.
Decker, Van C., Nicholson.
French, Kennard J., Factoryville.
Harrison, George M., Meshoppen.
Kinner, George M., North Mehoopany.
Lazarus, William W., Tunkhannock.
McKown, Herbert L., Tunkhannock.
Niles, Ralph M., Nicholson.
Rauch, George H., Noxen.
Williams, T. Oliver, Tunkhannock.

YORK COUNTY SOCIETY

(Organized May 11, 1873.)

(York is the post office when street address only is given.)

President...Curtis J. Hamme, Dover.
1st V. Pres..John A. Shower, 105 S. Beaver St.
2d V. Pres...W. Newton Long, 34 S. Beaver St.
Sec.-Rept....Gibson Smith, 222 S. George St.
Treasurer...Raymond E. Butz, 103 E. Market St.
Librarian...Wesley C. Stick, Hanover Bldg.
Trustees....James C. May, 1207 N. George St.
Nathan C. Wallace, Dover.
Harris R. Lecrone, W. Market St.
Censors.....Samuel K. Pfaltzgraff, 440 W. Market St.
Lawton M. Hartman, 412 W. Market St.
Isaac C. Gable, 46 S. Beaver St.
Exec. Com..Curtis J. Hamme, Dover.
Gibson Smith, 222 S. George St.
William F. Bacon, 50 S. George St.
Committee on Public Policy and Legislation:
Lawton M. Hartman, 412 W. Market St.
Louis S. Weaver, 3 E. Market St.
W. Newton Long, 34 S. Beaver St.
Official Publication: The Bulletin.
Issued Monthly.
Editor: Maurice C. Wentz, Weiser Bldg.

Stated meetings in York, in Colonial Hotel parlor, first Thursday of each month at 1 p. m. Election of officers in January.

MEMBERS (124)

Alleman, Horace M., Hanover.
Atkins, Joseph C., Red Lion.
Bacon, William F., 50 S. George St.
Bailey, Martha L., Dillsburg.
Baird, Homer Dale, 452 S. George St.
Barshinger, Martin L., 308 E. Market St.
Barton, Blaine B., Fawn Grove.
Bennett, John H., 469 W. Market St.
Bittinger, Joseph H. Hanover.
Blanck, John K., Wrightsville.
Bobb, Arthur A., Williamstown (Dauphin Co.).
Bortner, Clayton E., Hanover.
Bowers, Stewart C., New Freedom.
Bowles, George W., 112 W. King St.
Brodbeck, John R., Codorus.
Butz, Raymond E., 103 E. Market St.
Comroe, Julius H., 259 S. George St.
Coover, Donald B., Spring Grove.
Crawford, William L., Dillsburg.
Danner, William D., Glenville.
DeHoff, John E., 485 W. Market St.
Delle, Oscar A., York New Salem.
Dice, Laura J., 151 S. Queen St.
Dunnick, J. Nelson, 200 E. Cottage Place.
Eisenhower, Charles W., 211 S. George St.
Ellis, Robert L., York.
Ensminger, Samuel H., 409 W. Market St.
Fackler, Lewis H., 451 W. Market St.
Farkas, Herman H., Hartman Bldg.
Frey, Clarence W., Dallastown.
Gable, Isaac C., 46 S. Beaver St.
Gable, John C., Windsor.
Gailey, Herman A., Country Club Road.
Gamble, Boyd E., Manchester.
Gemmill, W. Frank, 135 E. Market St.
Gerry, Carl H., Shrewsbury.
Gilbert, John, 373 W. Market St.
Gittens, William W., 307 E. King St.
Gress, Henry V., Manchester.
Gross, Jacob M., 706 W. Market St.
Grove, Austin M., Lehmayer Bldg.
Hamme, Curtis J., Dover.
Harbold, John T., Dallastown.
Hartman, Lawton M., 412 W. Market St.
Hetrick, Homer C., Lewisberry.
High, William B., 600 E. Philadelphia St.
Hoke, Martin, Spring Grove.
Holtzapple, George E., George and Princess Sts.
Hoover, Benjamin A., Wrightsville.
Horning, Frank, Hellam.
Howard, James H., 137 S. Beaver St.
Hyson, J. Miller, Red Lion.
Jamison, James L., Wrightsville.
Jessop, Roland, 500 W. Market St.
Jones, Harry H., 743 E. Market St.
Kain, John B., 414 E. Market St.
Keagy, Charles A., Hanover.
King, Harry B., 257 E. Market St.
Klinedinst, J. Ferdinand, 220 S. George St.
Kohler, Horace W., Red Lion.
Krout, G. Elmer, Jacobus.
Landes, William L. S., 305 W. Market St.
Lau, Robert E., 627 W. Market St.
Lawson, Thomas A., Dallastown.
Lecrone, Harris R., 123 W. Market St.
Long, Alfred A., 34 S. Beaver St.
Long, W. Newton, 34 S. Beaver St.
Lutz, Jeremiah F., Glen Rock.
McConkey, Frank Vance, 549 Madison Ave.
McDowell, S. Ira, George and King St.
May, Charles H., 1207 N. George St.
May, James C., 1207 N. George St.
Meisenhelder, Edmund W., Jr., 1253 W. Market St.
Meisenhelder, John E., Hanover.
Meisenhelder, Robert N., Hanover.
Melsheimer, John A., Hanover.
Miller, Joseph S., 3 E. Market St.
Neff, Charles C., 127 E. Market St.
Noll, Pius A., 117 S. George St.
Noss, John C., York Haven.
Overmiller, N. Allen, East Prospect.
Parker, Brantley F., 3 E. Market St.
Perry, George R., Brogueville.
Pfaltzgraff, Samuel K., 440 W. Market St.
Ramsey, R. Warren, Delta.
Rasin, Robert C., 138 S. Forty-Sixth St., Phila. (Phila. Co.).
Rea, Charles, 107 E. Market St.
Read, H. Malcolm, 535 W. Market St.
Schellhamer, William H., 417 W. Market St.
Seitz, Clyde Le Grande, Glen Rock.
Shatto, Arthur B., 220 S. George St.
Shenberger, William J., Windsor.
Shirey, Bernard W., 136 E. Market St.
Shower, John A., 104 S. Beaver St.
Sieling, Jacob H., New Freedom.
Small, J. Frank, 161 E. Market St.
Smith, Charles H., 507 W. Philadelphia St.
Smith, Gibson, 222 S George St.

Smithson, William H., New Park.
Snyder, Francis J., 342 S. George St.
Spaeder, Philip J., 131 S. Beaver St.
Spahr, Charles E., 14 W. Market St.
Spangler, Charles C., 141 W. Market St.
Spotz, G. Emanuel, 9 E. Market St.
Stambaugh, Elmer S., 658 W. Market St.
Sterner, Lewis H., 230 York St., Hanover.
Stick, Edward W., Hanover.
Stick, Wesley C., Hanover.
Uffelman, Harry W., Lombard and Greene Sts., Baltimore, Maryland.
Venus, Charles H., 817 E. Market St.
Wallace, Nathan C., Dover.
Weakley, William S., 117 E. Market St.
Weaver, Louis S., 3 E. Market St.
Wentz, Alexander C., Hanover.
Wentz, Maurice C., Weiser Bldg.
Wentz, Parker N., 705 W. Princess St.
Wertz, Theodore H., Hanover.
Williams, Louis V., 126 E. Philadelphia St.
Wise, Francis Roman, 129 E. Market St.
Wolf, Charles N., Hellam.
Yagle, George N., Red Lion.
Yagle, James L., New Freedom.
Zech, Harry W., 1100 W. Market St.
Ziegler, John S., Hanover.

LIST OF PRESIDENTS OF THE STATE SOCIETY, 1848-1922

*Deceased.

*1848.	Samuel Humes	Lancaster Co.
*1849.	Samuel Jackson	Philadelphia Co.
*1850.	Wilmer Worthington	Chester Co.
*1851.	Charles Innes	Northampton Co.
*1852.	Hiram Corson	Montgomery Co.
*1853.	John P. Heister	Berks Co.
*1854.	Jacob M. Gimmill	Huntingdon Co.
*1855.	James S. Carpenter	Schuylkill Co.
*1856.	Rene La Roche	Philadelphia Co.
*1857.	John L. Atlee	Lancaster Co.
*1858.	Smith Cunningham	Beaver Co.
*1859.	D. Francis Condie	Philadelphia Co.
*1860-61.	Edward Wallace	Berks Co.
*1862.	George F. Horton	Bradford Co.
*1863.	Wilson Jewell	Philadelphia Co.
*1864.	J. D. Ross	Blair Co.
*1865.	William Anderson	Indiana Co.
*1866.	James King	Allegheny Co.
*1867.	Traill Green	Northampton Co.
*1868.	John Curwen	Dauphin Co.
*1869.	William M. Wallace	Erie Co.
*1870.	Samuel D. Gross	Philadelphia, Co.
*1871.	J. S. Crawford	Lycoming Co.
*1872.	A. M. Pollock	Allegheny Co.
*1873.	S. B. Kiefer	Cumberland Co.
*1874.	Washington L. Atlee	Philadelphia Co.
*1875.	Crawford Irwin	Blair Co.
*1876.	Robert B. Mowry	Allegheny Co.
*1877.	D. Hayes Agnew	Philadelphia Co.
*1878.	J. L. Stewart	Erie Co.
*1879.	Andrew Nebinger	Philadelphia Co.
*1880.	John T. Carpenter	Schuylkill Co.
*1881.	Jacob L. Zeigler	Lancaster Co.
*1882.	William Varian	Crawford Co.
*1883.	Henry H. Smith	Philadelphia Co.
*1884.	Ezra P. Allen	Bradford Co.
*1885.	E. A. Wood	Allegheny Co.
*1886.	Rees Davis	Luzerne Co.
*1887.	Richard J. Levis	Philadelphia Co.
*1888-89.	J. B. Murdoch	Allegheny Co.
*1890.	Alexander Craig	Lancaster Co.
*1891.	Samuel L. Kurtz	Berks Co.
*1892.	Henry L. Orth	Dauphin Co.
1893.	H. G. McCormick	Lycoming Co.
1894.	John B. Roberts	Philadelphia Co.
1895.	William S. Foster	Allegheny Co.
1896.	E. E. Montgomery	Philadelphia, Co.
*1897.	W. Murray Weidman	Berks Co.
*1898.	Webster B. Lowman	Cambria Co.
*1899.	George W. Guthrie	Luzerne Co.
*1900.	Thomas D. Davis	Allegheny Co.
*1901.	Francis P. Ball	Clinton Co.
*1902.	William M. Welch	Philadelphia, Pa.
*1903.	William B. Ulrich	Delaware Co.
1904.	Adolph Koenig	Allegheny Co.
1905.	William H. Hartzell	Lehigh Co.
1906.	Isaac C. Gable	York Co.
1907.	William L. Estes	Northampton Co.
*1908.	George W. Wagoner	Cambria Co.
1909.	Theodore B. Appel	Lancaster Co.
*1910.	John B. Donaldson	Washington Co.
*1911.	James Tyson	Philadelphia Co.
1912.	Lewis H. Taylor	Luzerne Co.
1913-14.	Edward B. Heckel	Allegheny Co.
1915.	John B. McAlister	Dauphin Co.
1916.	Charles A. E. Codman	Philadelphia Co.
*1917.	Samuel G. Dixon	Philadelphia Co.
1917.	Walter F. Donaldson	Allegheny Co.
1918.	Frederick L. Van Sickle	Lackawanna Co.
1919.	Cyrus Lee Stevens	Bradford Co.
1920.	Henry D. Jump	Philadelphia Co.
1921.	Frank G. Hartman	Lancaster Co.
1922.	Lawrence Litchfield	Allegheny Co.

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